

HANDICAPPED EMPLOYMENT PROGRAM

HEALTH PROFESSIONAL KIT

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TABLE OF CONTENTS

	<u>PAGE</u>
HEP Services	1 - 3
Attitudes of Medical Professionals - A Handicap to Disabled?	4 - 6
Educating Employers to Hire Disabled Workers	7 - 12
The Economics of Disability:	13 - 17
Physical Demands Analysis (P.D.A.)	18 - 32
Job Analysis and Workplace Design Resources For Rehabilitation	31 - 37
The Self-Concept of Disadvantages: Factors which Facilitate or Hinder Change	38 - 49
Projects with Industry: The Concept and The Realization	50 - 55
Adapt	56 - 74
Summary of Disabilities	75 - 78

**HANDICAPPED EMPLOYMENT PROGRAM (HEP)
SERVICES**

What is HEP?

The Handicapped Employment Program (HEP) of the Ontario Ministry of Labour is designed to provide direct advice and assistance to increase the hiring, retention and re-employment of qualified people with disabilities. Consultants from HEP are available for individual consultation. We also work through local business organizations to develop practical "How To" sessions on the productive employment of disabled workers. In addition, we share information about the financial incentives available from both the federal and provincial governments.

Independence through employment

Most people want to be independent and to earn their own livings as productive members of the working world.

People with disabilities are no different from anyone else. They want to work, and they can work.

Many employers are already aware that disabled people in competitive jobs are capable workers with the same full range of talents as their counterparts. In several key areas such as job performance, safety record, attendance and length of stay, they are equal to, and often better than, co-workers.

Employer's questions

Employers who have never hired a disabled person sometimes ask if insurance rates will be high, if accommodation and accessibility costs will be expensive and if extra supervision and special privileges will be necessary.

To help overcome these concerns, businesses working with HEP receive reliable assistance based on our experience of working closely with companies employing disabled people. Usually, no change to the work environment is necessary. Sometimes, a small adjustment may be needed to enable workers to perform their jobs efficiently. Employers who are actively involved in the positive experience of hiring, placing and supervising handicapped employees look beyond the disabilities and see only skilled people.

Business benefits

HEP consultants explain to employers how businesses can benefit from in-place provincial and federal government programs that provide significant financial incentives for hiring handicapped workers.

Incentive programs cover:

- wage subsidies
- on-the-job training
- modification of workplace and equipment
- technical aids

Employers are also given information about the Workers' Compensation Board second Injury and Enhancement Fund, a no-cost benefit that can be used when there is a proven relationship between an old and a new injury. Other benefits are also available under this fund.

Finding skilled workers

Competitively employed people who are disabled prove to be valuable workers who are efficient and capable. In order to tap this productive pool, HEP has available lists of local resources that will put employers in touch with skilled people from the disabled community. Since some handicaps can prevent disabled job-seekers from finding out about, or applying for vacancies, we suggest that employers introduce two new approaches to their advertising:

- feature the wheel chair access symbol
 - state: "physical demands on request"
- or

Physical Demands Analysis

"Physical Demands Analysis" is a simple procedure that gives employers the information needed to match the demands of any job with the physical capabilities of an applicant. A one-page checklist is used to provide information on the physical functions required to perform a job. This information can then be used for discussion about job-related tasks during the job interview. HEP consultants assist employers in undertaking a physical demands analysis of jobs in their business.

How else does HEP help?

HEP also provides up-to-date print information on all aspects of employing disabled people, arranges awareness seminars and sponsors local projects and conferences. These steps help to overcome some of the obstacles to employment faced by many disabled job-seekers.

HEP consultants are willing to assist employers in their efforts to hire, retain and promote qualified employees with disabilities.

ATTITUDES OF MEDICAL PROFESSIONALS

A HANDICAP TO DISABLED?

BY

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Attitudes of Medical Professionals — A Handicap to Disabled?

by Lynne Quon, Assistant Editor, Royal College of Physicians and Surgeons of Canada "Annals", Reprinted from Volume 16, Number 3.

Disability does not discriminate. A sudden car accident on an icy road can change the whole course of a life. It can happen to anyone anywhere at any time. That is why disabled people would like to be treated just like anyone else. This was the theme that permeated discussions at the first Canadian Congress of Rehabilitation, which took place in Ottawa in March 1983.

An idea of the difficulties faced by the disabled was given by one of the presenters at a workshop on ethical issues in rehabilitation. In March 1975, John Pepin, an Ottawa radio advertising salesman, was involved in a car accident and became a quadriplegic with paralysis from the neck down. During chronic care, he needed a respirator to survive. In June 1977, he married, left hospital and began a new career as a pastoral counsellor.

"At first, after the accident," he said, "I was prepared to go along with the medical specialists and leave everything up to them. At one institution, there was an attitude that you were fortunate that they were there to look after you. I had to relearn everything again. I was almost like a child. But if you continue to be fostered by the institution, you continue to live like that."

During his stay in hospital, he faced many problems.

"There was a lot of humiliation, feeling like a burden," Pepin said, "the contrary to what we were taught to be before — independent, strong. No-one offered me education. People involved in rehabilitation don't really have the information themselves. The idea of functioning, getting married, living as a

person, providing, having a career, I don't think a lot of people know or believe that it's possible. I was so frustrated by the lack of consideration and respect, especially when the medical profession saw no hope and the attitude was one that there is not much we can do. How could I fight back?"

Another problem that he faced was the need for intimacy with another person. "I wanted to develop a relationship with the woman who is my wife now, but I was in a room with another person. When I wanted to be alone with her, it was difficult to close the door."

He said that the problems did not stop when he left hospital.

"There were no support services available. It was a constant struggle. If the insurance company did not pay me, my nursing care might have been cut off."

Many of the disabled would like medical professionals to be more sensitive to their problems. This was brought out sharply at a workshop on the consumer independent living movement. The workshop leaders were Jane Staub, Director of Psychological Services and Audrey King, a psychologist at the Ontario Crippled Children's Centre in Toronto. They pointed out that the problems have been exacerbated by the speed of medical advances.

"Without physicians, many of us would not be here today. Physicians save the lives of those who might not have survived, leaving them with a chronic disability."

They said that the medical model of care places the physician at the apex of a vertical structure and the patient at the bottom as a passive recipient of services.

"Rehabilitation medicine has used the team approach, in which many professionals are actively involved. The disabled person is not an equal member of this team. The medical professional is over-involved. When the condition of the patient is stabilized, this is unnecessary and counter-productive. In their zeal to be helpful, the professionals don't know when to stop, so the patient is always seen as a patient."

They said that health care professionals may make mistakes when they make decisions for the disabled, because they do not know what the patient has to face.

"Years and years of education does not teach what being disabled is like. The professionals only see those disabled people who are in trouble. They typically have not worked with them outside the rehabilitation centre. The importance of the home environment is ignored and inappropriate solutions are provided. For example, in the case of a West Indies paraplegic boy who was being trained to use a manual wheelchair, the professionals caring for him thought that he was not motivated. But in his village, there were no paved roads and he could not get around in the standard wheelchair. When his wheelchair was fitted with over-large tires and a power source, he was happy to use it. Meanwhile, there had been wasted time, staff frustration, money lost, and the boy had almost been dismissed as unmotivated."

The wants of the disabled may be different, they said, from the needs perceived by professionals.

"The relationship that the disabled seek is one of equality, not an apparent child-parent relationship."

whether intended or not. The goal is not necessarily to have disabled people living on their own, physically able to do things for themselves, but to give them the exercise of choice and control over their lives. They should be responsible for themselves. This is a state of mind, not of body. The professionals have to learn to gradually let go of the reins of responsibility. Learning self-responsibility involves taking risks and making mistakes."

What role should medical professionals play in the lives of the disabled?

"The role of care providers is to provide unique services that the community at large cannot provide. The rehabilitation services are but one important stage in the process. They are essential for the newly disabled, who are frightened, confused and might not survive, and who need to recover maximum function. After the condition has stabilized, the professional should act as a consultant, if and when the patient requests it."

They said that medical researchers should also be more considerate of the needs of the disabled.

"Researchers focus on areas that are not that important or relevant. They should ask the disabled before beginning their research. They should do work from a different approach. For instance, they could look at coping and the mechanisms of coping, how some people cope and their strategies."

In some cases, they said, an attitude may be misunderstood.

"People assume that being a quadriplegic is a tragedy beyond comprehension. Yet a person with a club foot can feel that his life is over, finished and done with, while to a quadriplegic, life may never have been so rewarding and so meaningful. The assumption is so ingrained that if a severely disabled person does not become depressed, angry or withdrawn, we think that he is peculiar and call in a psychiatrist."

The viewpoint of the medical professional was not omitted at the conference. For example, Dr. Denton Buchanan, a psychologist at the Royal Ottawa Rehabilitation Centre, outlined some of the problems that he faces.

"As a professional, I feel that I

have enough knowledge about a patient's condition to make an informed decision. But what happens when the patient has to make an informed decision? Sometimes there is failure to hear the information that may well have been given. The patient's anxiety level may have been too high. The information was given in medical double talk or the patient had just turned it off. There are often practical problems. I remember a patient reacting with great glee, because he was about to see his surgeon on morning television. He had never seen the surgeon, even though he had had radical abdominal surgery performed by him. Often, the people who may have to inform the patients are busy residents on long work shifts."

He pointed out that sometimes it could be better for a patient not to know.

"When the diagnosis is multiple sclerosis, for example, and there is no treatment and no cure, why bother telling the patient? Why load on that person the horrors of the diagnosis? Patients never say they do want to know or that they don't want to know. What if I think that it's in their best mental health interests not to know?"

He raised the question of suicide, saying that the number of suicides among the physically disabled is three times the number in the population at large.

"Do the physically disabled have a right to commit suicide? What is the role of professionals in intervening? If a person is holding a gun to his head, then we can jump in and remove the gun. But what if the patient is committing passive suicide, through lack of action, failure to take care of himself, withdrawal from treatment, doing away with himself? We cannot jump in to stop him. It is not easy to intervene. Is smoking suicidal? Is a high-salt high-cholesterol diet suicidal? Can we force a person to continue treatment? How many hypertensive people continue to smoke? Do we have the right to yank the cigarette out of their mouths?"

In addition to such problems as shortage of beds that other physicians face, he said that rehabilitation professionals have other

burdens. "My credibility is at question," he said. "That's why I'm an advocate of peer counselling. The best person to talk to a recent quadriplegic would be another quadriplegic. There is a problem with staff burnout in rehabilitation. We are faced with the inability to cure, whereas our whole training is geared to improvement. Another physician can be delighted when a shot of penicillin works. In rehabilitation medicine, the rewards are far between and they are not of the same type."

Overall, he said, there looms the ever present possibility of a lawsuit.

"The legal question hinges on the word 'if' — if a person is competent, he has all legal rights. But deciding about competence is not easy."

Professor Sandra Rodgers-Magnet, a lawyer at the University of Ottawa, was also a presenter at the ethics workshop. She said that conscious attempts to avoid a lawsuit are not always the wisest course of action.

"When you give negligently bad advice," she said, "you are liable. But when you have done everything you can, you may still be sued. It is not much more satisfying to be sued and to win, than to be sued and lose. Institutions should not, however, pattern their behavior to avoid lawsuits, because it usually does not work."

She said that the law is based on certain principles, the principle of autonomy, which states that the human person is inviolable and no one can interfere with it without the permission of the person, and the principle of consent, which states that a physician is obliged to obtain the consent of the patient before offering treatment and after giving the patient enough information about the risks and benefits.

"The disabled have the same right to commit suicide as the rest of us. They cannot be forced to accept treatment if they are competent. They are free to make bad decisions just like you or me. What is asked of the care providers is the level of care that would be provided by competent peers. The physician is the servant. He has been hired by the patient to give care and information." □

EDUCATING EMPLOYERS TO HIRE

DISABLED WORKERS

BY

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By Ralph E. Matkin

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Educating Employers to Hire Disabled Workers

Abstract

In order for job placement to be performed effectively and efficiently, locating or developing job openings is a crucial prerequisite. Rehabilitation personnel, and particularly counselors, generally have expressed that neither job development nor placement are activities they were prepared to perform or have time to pursue. Indeed, some rehabilitation personnel have gone so far as to suggest that contacting employers for job openings for disabled clients is akin to being a "door-to-door salesman," and as such is thought to be "unprofessional." The purpose of this manuscript is to offer three possible contact sources which rehabilitation personnel can utilize: private industry councils, employment agencies, and insurance carriers. Each of these groups not only is more familiar with the needs of employers than rehabilitation personnel typically are, but their expertise can be utilized by rehabilitation personnel to educate employers to the cost benefits of hiring disabled workers.

Employment development for, and job placement of, disabled clients are perhaps the most unique characteristics that set the rehabilitation field apart from other human service professions. Indeed, locating job openings may be the most important phase within the vocational rehabilitation process after a client's abilities have been identified. Nevertheless, job development probably has received the least attention from rehabilitation personnel in terms of technological advances and practice (Ugland, 1977). This general lack of perceived importance and subsequent reluctance to engage in employment development activities is apparent particularly when examining role and function studies of rehabilitation counselors; the single largest professional group in the field (Emener & Rubin, 1980; Matkin, 1982; Muthard & Salomone, 1969; Rubin, Matkin, Ashler, Beardsley, May, Onstott, & Punkett, in press). It is surprising to note, however, that rehabilitation administrators, supervisors, and especially rehabilitation educators attribute significantly higher importance to these activities than do rehabilitation counselors as being part of the counselor's job (Emener & Rubin, 1980; Muthard & Salomone, 1969; Rubin et al., Note 1).

The apparent reluctance among rehabilitation counselors to engage in job development tasks may arise from "many counselors feeling that talking to employers about hiring disabled people is comparable to being door-to-door salesmen and, as such, is somewhat 'unprofessional' " (Minton, 1977, p.144). For whatever the reason(s) offered by practicing rehabilitation counselors to minimize their involvement in the job development and placement process, the question of whose responsibility these duties are remains unanswered. Regardless of who performs these activities, it is clear that effective job placement must begin with strategies designed to educate employers about the benefits of hiring disabled workers. The purpose of this article is to suggest a method whereby rehabilitation personnel, particularly counselors, can communicate more effectively with employers; thereby, increasing the likelihood of locating job openings and improving job placement activities for disabled workers in spite of a depressed labor market.

Economics: A Recurring Theme

Employer Concerns

Florian (1978) indicated that rehabilitation personnel can encourage employers to hire disabled persons by designing and implementing specific information campaigns that focus on employers as a group, rather than as individuals. Yet, forming an alliance between rehabilitation and industry requires addressing the concerns expressed by employers relative to such issues as productivity and costs. The rehabilitation literature is replete with examples of employer attitudes toward disabled workers. Most notably, these opinions are expressed generally in the following manner: (a) increased costs are a barrier to hiring disabled workers, especially when architectural changes are believed by the employer to be necessary; (b) insurance rates for employee coverage will increase when disabled clients are hired; (c) attendance among disabled workers will be substandard, job

turnover will be higher, and productivity will be negatively affected; and (d) disabled employees will be less flexible in their ability to perform a variety of jobs, thereby increasing the associated manpower needs (and costs) of the employer (e.g., Randles, 1976; Reagles, 1981; Williams, 1972).

Not only have these concerns (based primarily on stereotypic misunderstanding and/or misinterpretation) been perpetuated among employers, evidence suggests that these misconceptions are the principal reasons disabled persons are received less than enthusiastically by private employment agency counselors (Johnson & Heal, 1976). Needless to say, attempts by rehabilitation personnel to dispell inaccurate employer beliefs about disabled persons' work capabilities have been numerous. On the other hand, the net effect of these attempts on changing employer attitudes seems to have been minimal, despite their focus on cost and productivity issues.

Assorted Research Findings

Studies of National Scope. Large scale research addressing the effects of disabled employees on productivity rates and other economic issues have been few and date back to a period shortly after World War II. In 1948 the United States Bureau of Labor Statistics found that disabled workers were as efficient as nondisabled employees; they also had no more minor injuries and a lesser number of severe injuries than their able-bodied peers (President's Committee on Employment of the Handicapped, 1948). Furthermore, this report indicated that no disabling injury suffered by a disabled worker could be traced to the original impairment, but rather injuries sustained on the job were related to job hazards, not to the presence of disabilities. These findings were significant in that they were generated from 109 different industrial plants employing over 11,000 disabled workers and over 18,000 unimpaired workers (President's Committee on Employment of the Handicapped, 1948).

About the same time as the Bureau of Labor Statistics was conducting its investigations, the Dupont Corporation began studying the effects of its 1,452 severely disabled employees on safety, absenteeism, work performance, and related variables. When compared to able-bodied employees, the Dupont Corporation found that 96% of its disabled workers were rated average or better in safety, both on and off the job, 79% had average or better attendance; 93% had less job turnover; 91% were rated as average or better in job performance; and few modifications were required to alter the physical operation of the different job activities (Sears, 1975). Certainly, the large number of disabled persons included in these two studies lends increased credibility to their findings. Unfortunately, these results and their implications are over 30 years old and may not accurately reflect the present employment situation among handicapped workers. Therefore, more recent information about the effects on productivity and costs associated with hiring disabled workers must be communicated to employers.

Small Scale Studies. Investigations conducted more recently among local employers support the earlier national findings that there is little difference between disabled and non-disabled workers with regard to job performance, and often times less of a tendency toward absenteeism and injury (Wessman, 1965; Wright & Trotter, 1968). Moreover, in a study conducted in the Fresno, California Internal Revenue Service Center between disabled and non-disabled employees, no significant differences were found in overall

job performance when measured by starting and current salary levels, length of employment, overall supervisory ratings, and self-ratings of employee satisfaction (Goodyear & Stude, 1975). Nevertheless, in spite of evidence that shows that disabled employees are less likely to be injured and are more reliable workers than their able-bodied counterparts, barriers to employment continue to be expressed in other forms, such as, perceived problems of job transfer, suitability, and difficulty in supervision once a disabled person is employed (Survey of Attitudes, 1974).

Since economic issues appear to be the focal point of concern among many employers, it would seem most beneficial to approach employment development from that perspective. Consequently, to be effective in employment development, rehabilitation personnel must either possess or acquire the knowledge and language skills associated with business and economics in order to communicate effectively with employers. However, developing a comprehensive understanding of business and economic issues in a reasonably short time is not realistic. Therefore, it would be more advantageous for rehabilitation personnel to initially become familiar with basic terminology, while simultaneously utilizing the expertise of intermediaries who are familiar with the concerns and daily activities of employers from a business perspective.

Alternative Employer Contact Sources

Private Industry Councils

Congress soon will begin the process of diverting billions of dollars from programs funded under the expired Comprehensive Employment and Training Act (CETA) into 460 private industry councils (Business Tackles Hard-Core Unemployment, 1982). Private Industry Councils (PICs) were created in 1978 to determine whether input by business into training programs would improve the chances of reducing unemployment among the so-called "hard-core" unemployed worker. Interviews with job training experts in 15 cities have revealed that PICs have been useful particularly when matching training to existing jobs; especially when voluntary PIC boards meet regularly to help design training for specific job classifications (Business Tackles Hard-Core Unemployment, 1982).

Initially, PICs were established as \$400 million-a-year pilot programs to find solutions to CETA's weaknesses (Business Tackles Hard-Core Unemployment, 1982). The idea was that councils were to be formed which were composed primarily of business representatives rather than government officials or designees. The rationale for the predominant business orientation of PICs was that training programs could be designed that are more applicable to the job market and which lead to permanent job positions, rather than the temporary 18-month jobs of CETA. How well PICs use Congressionally appropriated monies certainly will have an impact on disadvantaged workers and public policy. If PICs can make federal training programs work, thousands of the nation's estimated three to four million "hard-core" unemployed could become productive members of society. PICs could also help employers meet their needs for skilled workers relatively inexpensively. On the other hand, if PICs fail, such groups as the National Alliance of Business, which helped organize and lobby for PIC legislation, may lose future support for federal manpower programs.

Rehabilitation personnel responsible for conducting employment development activities have an opportunity to educate employers to hire disabled workers by contacting and working closely with PICs. Needless to say, the dominant business representation on these councils can serve as substantial leverage for influencing employers to seriously consider hiring disabled persons. Moreover, involvement with PICs can assist rehabilitation personnel in becoming more familiar with the fiscal issues affecting employers, can serve as a demonstration of rehabilitation's interest in employers' concerns, and can probably lead to the development of more job openings for qualified disabled persons.

Employment Agencies

It has been estimated that approximately 7,500 private placement firms with nearly 12,000 offices exist in the United States and Canada (How to Put an Employment Agency to Work for You, 1980). An effective employment agency has a sizable and varied inventory of job orders (i.e., notice of position vacancies) from employers, as well as a steady flow of job seekers representing a wide range of work skills and career experiences. By using a placement firm, employers are thereby relieved of the costs of advertising job openings and the time it takes to screen out unqualified applicants. However, employers with federal contracts are required by law to list all job openings (up to the \$25,000 salary level) with local Job Service Offices (Matkin, 1982a). Generally speaking, private employment agencies differ from other similar service agencies by charging a fee for activities that result in a client being hired for a job. The placement fee is paid to the employment agency either by the hiring employer or the newly hired job seeker. *Changing Times*, a monthly business magazine, reported that approximately two-thirds of the jobs listed with private placement firms are fee-paid by the employer at a cost ranging from 7% to 15% of the employee's first year income (How to Put an Employment Agency to Work for You, 1980).

Despite the fact that employment counselors working in private placement agencies attempt to match persons to available jobs, much in the same manner as rehabilitation personnel perform selective job placement with disabled clients, Johnson and Heal (1976) noted that private employment counselors are reluctant to serve disabled clients. Indeed, Zadny and James (1978) found that the use of employment agencies account for less than 5% of the jobs obtained by disabled persons. On the other hand, when vocational rehabilitation personnel used the "job order" techniques mandated within private placement firms, not only were more job placements obtained, but the number of rehabilitated clients increased while the number of cases closed as "not rehabilitated" decreased (Zadny & James, 1979). In spite of this finding being significant in and of itself, it was equally applicable for severely disabled clients as well; leading to the conclusion that increases in the number of placements obtained through third-parties were tied to increases in total rehabilitation (Zadny & James, 1979).

Rehabilitation personnel appear to have at least two options available as methods to increase employment development and job placement relative to using private employment agencies. First, it has been demonstrated that using job orders is perhaps the most effective method for determining both the availability of job openings and the securing of job placements. A job order generally consists of information provided by the employer which includes the name and ad-

dress of the employer, the name of the job position and a brief description of the duties and skills required in that specific employment situation, salary/wage range, starting date, and the date that the job order was initiated (Matkin, 1982a). Job orders also identify the contact person authorizing the employment request, as well as the person within the employment agency who receives the job information. Obtaining job orders from employers would then require rehabilitation personnel to personally contact employers/personnel managers on a continuing basis to solicit job referrals.

A second method would be for rehabilitation personnel to work in concert with private employment agencies. This technique may take any number of forms, such as, providing consultation to employment agencies about rehabilitation issues and the needs of disabled persons, offering time and space within the rehabilitation agency for a private employment counselor to work part-time, or having a rehabilitation person working part-time within a private employment agency to serve the needs of disabled job applicants. Regardless of the employment development and job placement techniques used when working with a private placement agency, it is important to remember that the clients sent to prospective employers must be capable of performing the specified job in terms of the prerequisite knowledge and skill requirements. Referral of individuals without these abilities, under the hope that the employer will have compassion for, and be understanding of, a disability that interferes with the job performance, will not only jeopardize future relations with the employer, but can serve to reinforce any negative beliefs held by the employer about disabled persons in general.

Insurance Representatives

Contrary to the popularly held belief that hiring disabled workers increases insurance premiums, workers' compensation rates are determined by the relative hazards of the industrial occupation and the employing company's accident record (Alliance of American Insurers, 1982; Baker & Karol, 1979; Illinois Governor's Committee, 1982; President's Committee on Employment of the Handicapped, 1982; Reagles, 1981). When determining workers' compensation insurance rates, different occupations are classified separately so that the cost of accidents can be assessed proportionately to the accident risks involved. In other words, hazardous occupations, such as window cleaning, will command a higher insurance rate than a more sedentary occupation such as accounting. Similarly, some employers have better safety programs than do others. Thus, workers' compensation pricing structure recognizes and encourages accident prevention programs and safety consciousness by reducing the rate for those employers having better-than-average safety experiences and, conversely, increasing the rate for those who have lower-than-average safety records. Furthermore, workers' compensation rates are established for each basic occupation in terms of \$100 of direct labor cost (payroll). For example, if the rate for "machine assembly" is \$1.50 per \$100 of payroll, an employer having \$100,000 in payroll cost associated with machine assembly will pay \$1,500 in workers' compensation premiums. Finally, each \$100 of payroll cost for the other major occupational groups in an employer's workforce (e.g., secretaries, administrators, etc.) is then multiplied by the corresponding rate for each group in order to derive an overall premium cost (Wallace, Note 1).

Compensation payments for work deaths and injuries in the United States in 1975 amounted to over \$6.5 billion according to the Alliance of American Insurers (1978). This figure included over \$3.4 billion paid by private insurance carriers under standard workers' compensation policies, nearly \$2.3 billion paid by state funds, and over \$8.15 million paid by self-insured employers. Analyzed differently, payments consisted of over \$2 billion paid for medical and hospitalization expenses and over \$4.49 billion in compensating payments (Alliance of American Insurers, 1978).

Employers may provide employee group insurance in any of five different forms: life, accidental death and dismemberment, short-term disability, long-term disability, and health (Baker & Karol, 1979). The basic principle behind these forms is one of reducing risk and spreading the loss. Risk relates to the degree of probability that a loss will be incurred. Spreading the loss is then accomplished by extending insurance coverage to a sufficient number of persons so that the distribution of losses can be predicted with a higher degree of certainty. With regard to this issue, employers have expressed the belief that disabled workers will suffer more severe injuries than non-disabled employees, thus compounding the pre-existing disability and the associated costs (President's Committee on Employment of the Handicapped, 1982). All states, however, provide second-injury funds financed by insurance carriers and self-insured employers to relieve the employer of liability for preexisting disabilities (United States Chamber of Commerce, 1983). The second-injury funds generally pay the difference between the employer's responsibility for the new injury and the total benefits payable to a disabled worker. Most states require knowledge by an employer prior to the accident, or prior notification by the employer to the state administrative agency that a disabled applicant has been hired, in order for benefits from these second-injury funds to be made available (United States Chamber of Commerce, 1983).

Given the assumption that rehabilitation personnel generally possess insufficient knowledge of insurance issues, especially as they relate to disabled employees, a viable method for educating employers about the benefits of rehabilitation is by educating personnel who market insurance policies becomes a viable method for indirectly educating employers. Private insurers market their products two major ways: (1) through independent agents or brokers, or (2) directly through their own sales employees (Alliance of American Insurers, 1981). Insurance representatives can be most beneficial to rehabilitation personnel who are responsible for job development and placement in the following manner:

- (a) They have direct access to the employer.
- (b) They explain how employers are affected by workers' compensation law in business language.
- (c) They arrange the required coverage best suited to the employer's needs.
- (d) They distribute safety literature and emphasize the benefits of loss control measures.
- (e) In the event that accidents occur, they assist employers in the important aspects of contacting the insurer and working with the injured worker.

When rehabilitation personnel become able to convince the insurance industry of the cost benefits to policyholders that ultimately reduce compensatory payments paid by insurers for medical and rehabilitation services, the rehabilitation

field will have developed perhaps its most influential ally for educating employers to hire disabled workers.

Conclusions

Most people with handicaps demand state and private rehabilitation agencies to be more effective, imaginative, and assertive in performing employment services (Galvin, 1975). Yet, in spite of the abundance of data suggesting that hiring disabled persons is "good business," employment development and job placement activities continue to be infrequently and generally ineffectively practiced among rehabilitation personnel. The reluctance of rehabilitation personnel (particularly counselors) to engage in job marketing activities is understandable if training and preparation for those activities is minimal or nonexistent in graduate rehabilitation programs or in on-the-job training situations. Although educating employers to hire disabled workers certainly should enhance employer attitudes in a positive direction, the mechanisms used to educate employers have not produced the results to the degree desired. Therefore, it is suggested that rehabilitation personnel attempt to educate employers in a more indirect manner by consulting with Private Industry Councils, Private Employment Agencies, and Private Insurance Carriers. Indeed, each of these groups is more familiar with employer needs and concerns in terms of manpower and its associated costs than are rehabilitation personnel. Furthermore, by speaking the language of business to business persons and incorporating the benefits of rehabilitation into these discussions, employment development and job placement of disabled persons can be improved.

□

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Matkin

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THE ECONOMICS OF DISABILITY:

BY

SUSAN R. HAMMERMAN,

DEPUTY SECRETARY GENERAL
REHABILITATION INTERNATIONAL

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The Economics of Disability:

by Susan R. Hammerman,
Deputy Secretary General, Rehabilitation International
*Presented to the CRCD Western Regional Conference,
Winnipeg, Manitoba, September 23, 1983

The headlines are familiar to all of us: unemployment up, productivity down, belt-tightening everywhere and for the social services, a simple answer to all proposals — cut back! Perhaps a better way to describe the economics of disability would be to talk about dealing with disability during the hard times, the times when the term "global economy" is beginning to take on real meaning for peoples at opposite ends of the world. The times when gains hard earned by disabled people, their families, service providers, and other advocates in obtaining appropriate services, barrier-free facilities, increased skills, and income are being whittled away by the effects of unconcern, of disorganization, of inflation, of lesser regulation, and of financial curtailment.

It is now almost ten years since I began to analyse the issues underlying what can be called the economics of disability for Rehabilitation International and the United Nations. In the beginning, the analysis was directed to answering the questions most frequently posed by planners, particularly in nations which were newly developing basic health, educational, and social services. The popular question then was, How can we afford to develop rehabilitation and disability prevention measures when so much else must be done, these programs are so very costly, and they are of benefit to so very few?

Ten years later, the evidence is well in and we know the answer to

that question: Disability will create a cost to society regardless of whether or not rehabilitation services exist. In fact, the more a society recognizes these costs and the more it attempts to reduce them through the provision of adequate disability prevention and rehabilitation measures, the greater the overall economic return.

The international literature and research are available for anyone

Why are the available data which demonstrate not only costs but also extremely important benefits of rehabilitation activity largely being ignored?

interested in reviewing them. In the case of the analysis that I carried out for Rehabilitation International, data collected from more than 140 studies in 40 countries were reviewed. Early studies from Canadian institutions were of assistance in this process. In particular, the Ontario Worker's Compensation Board studies during the 1960s on worker income before and after rehabilitation and the extensive study on disability policy by Ms. Joan Brown for the Canadian Council on Social Development in 1977 were important.¹

Some New Questions

We are armed with our facts about the economics of disability and now it is critical to begin asking some new questions:

Why have these facts and figures on the economics of disability made such a little dent in the

public perception of the impact of disability on society as a whole?

Why are the available data which demonstrate not only costs but also extremely important benefits of rehabilitation activity largely being ignored?

Why is it that the very planners and economists who so definitely need this information are the people who are ignoring it the most?

Why do the misconceptions persist? The misconceptions are that rehabilitation services are costly and unaffordable, particularly when resources are limited; that rehabilitation and disability prevention measures benefit only a relatively small proportion of any population; and that planning for appropriate disability prevention and rehabilitation measures does not need to be a part of all planning of systems for the social and educational development of the people of a nation, from the very outset of that planning.

Some Old Facts

Perhaps it would be helpful to let some of the facts that have emerged from our international analysis of the economics of disability speak for themselves.

The costs of disability accrue regardless of whether or not rehabilitation services are available. These costs include the loss of the skill, experience, and contribution of people who become disabled.

The United Nations Expert Working Group on the Economics of Disability cited as among the consequences of disability:

□ reduced ability to care for oneself and others.

- reduced self-esteem and self-satisfaction.
- reduced time and energy for interactions outside of the family.
- increased familial stress.
- potential rejection of the disabled individual and family, by others in the family and the community.

The U.N. Group further noted that while disability may affect the work force participation of disabled people, it has secondary effects on the work force participation of those who are close to the disabled person: As many as 25 per cent of the people in any nation may be directly or indirectly affected.

There is a strong relationship between disability and poverty. This derives in part from the combination of reduced family income and the extra costs of disability. Poor people who are likely to be less well educated and less well in reach of adequate medical care are also more prone to becoming disabled. Recent statistical data from the United States have revealed that disabled people are more than twice as likely to be poor than non-disabled people (18.7 per cent as compared to 7.1 per cent).

We have found similar statistical evidence in other developing nations.

The United Nations Expert Group recognized that, in developing countries in particular, planners tend to overlook or discriminate against the needs of disabled people on the basis of giving priority to systems that will benefit the greatest number of people. They noted that this can have the effect of keeping disabled people and their families amongst the lowest strata of society, both socially and economically.

Rehabilitation measures, which include a comprehensive range of medical, social, educational, and vocational services, are one way to reduce the inherent costs of disability. Disability prevention measures, integrated within health care, work standards, and environmental controls, and the balance of investments for these measures in

relation to overall expenditures for rehabilitation service delivery and social benefit provisions, can be of great importance to the range of overall expenditures for disability. I wonder if spending patterns in Canada have changed very much from the time when responsible planning authorities spent 97 per cent of their budgets on cure and compensation and only 3 per cent

Planners tend to overlook or discriminate against the needs of disabled people on the basis of giving priority to systems that will benefit the greatest number of people.

on prevention programs, as indicated by Ms. Brown in 1977.

More is being spent to foster the dependence than the independence of disabled people, in the form of income maintenance payments and other benefits and the channelling of funds for institutions, than is being spent for programs such as job training, attendant care, and architectural and transportation barrier removal. Insufficient resources for rehabilitation, independent living, and placement in employment often give rise to higher costs in the social insurance sector.

Conversely, increasing numbers of people are drawing disability benefits. A recent study by Copeland for the International Social Security Association indicated that during the period from 1966 to 1977 a steep growth in the number of disability pensioners was not related solely to an increase in the incidence of disability.² The study covered Belgium, Finland, France, the Federal Republic of Germany, the Netherlands, and the United States. Variables such as the rate of unemployment and the relative monetary value of disability benefits may have a significant impact on the cost and extent of disability programs. This has contributed to the precarious financial position of social security systems in many major industrialized nations.

Income maintenance payments, when coupled with rehabilitation measures and job training, can offer an incentive to return to work. Such payments may constitute a disincentive to employment when their monetary value exceeds the individual's pre-disability earnings. The Copeland study particularly noted data from the Netherlands indicating that many disability pension awards were granted for total disability even in cases where workers may have been only partially incapacitated for work. The reason given was that no suitable jobs were available.

Rehabilitation measures can produce significant reductions in expenditures for disability pensions and public assistance. These savings in social benefit expenditures can be used to demonstrate repayment of the costs of rehabilitation in a relatively short period of time. The institution of early detection and rehabilitation measures is being studied by European nations now as a means to achieve reductions in disability benefit costs.

The slowing of economic growth, increased automation, the use of new technology, and changing labour markets are all leading to the widespread ejection from the work-force of physically or mentally impaired workers. This channelling out of less profitable workers from the labour market is often done through the use of more broadly defined entitlements to disability benefits. In fact, we have "medicalized" what is fundamentally a labour market problem related to shortages of job opportunities and the absence of adaptations for disabled people in the workplace.

Disabled people in industrialized

More is being spent to foster the dependence than the independence of disabled people,

nations are facing unemployment rates 3 to 4 times those for able-bodied workers. They are the last in and the first out of the work-force.

Few, if any, nations recognize the complex matrix of interactions that take place among the varying

provisions offered for social benefits, rehabilitation assistance, and placement of disabled people in the labour market. The interaction is generally neither planned for nor understood. Labour market problems are "medicalized" and social benefits become "disincentives" to both rehabilitation and the return to work. Efficient outcomes of spending in one aspect of the rehabilitation process, such as successful medical or educational interventions, may be virtually eliminated as a result of failures along the line. The medically or educationally rehabilitated person may be unable to leave-home or arrange transportation to work because of architectural or service system barriers. Gerben de Jong, in a recent widely distributed article for Scientific American, points out that nations that are increasingly preoccupied with the costs and benefits of financial outlays on behalf of disabled people fail to recognize that these are the costs of success — success in saving and prolonging the lives of millions of people.³

Take as an example the situation of Ken Eastlake, a person with muscular dystrophy living in New Zealand who found that when he worked, his weekly transportation costs far exceeded his disability benefit coverage. Transportation costs and other factors led him to become a disability beneficiary again. He describes the situation as not like having less quality of life but like having no quality of life. He says, "All I want is a fair deal. By being kept in a financially dependent position, I feel I cannot participate socially or be effective in any way that is significant."⁴

His situation can be multiplied hundreds of thousands of times over. It represents a very positive picture, however, compared to the situation of the majority of the world's disabled people — the more than 400 million people who live out of reach of assistance of any kind.

The Cost-Benefit Tool

Cost-benefit analysis is a procedure that attempts to evaluate the

economic advantages and losses to society of a particular policy, action, or series of policies and actions. It requires the ability to compare in commensurate units all costs and all benefits of a particular action. This means translation of every outcome into monetary terms.

Cost-benefit analyses have been applied to many aspects of rehabilitation service provision under varying conditions. The majority of vocational rehabilitation programs show highly positive benefit-to-cost ratios, even when ignoring non-monetary gains. Similarly, special education, which on the average may cost twice as much for the disabled child as for the non-disabled child, demonstrates very positive benefit-to-cost ratios in the form of tax recoupment from future earnings, reduction of income maintenance costs, and avoidance of the costs of institutionalization.

However, cost-benefit methodology is subject to many variables and its capability is especially limited when applied to social phenomena.

Very few of the outcomes of actions to prevent disability or to

Vocational rehabilitation programs show highly positive benefit-to-cost ratios

reduce its effect through rehabilitation have as yet been quantified in monetary terms. The Winnipeg Working Group drew special attention to the fact that merely because benefits are non-monetary does not mean that they are non-economic. The problem is one of methodology development and application in research. The Winnipeg Group also emphasized that any discussion of costs must include the question of human needs and the extent to which these needs are identified and satisfied by the programs offered.

Even when it has been possible to isolate specific aspects of rehabilitation activity for cost-benefit assessment, methodological and structural variables have meant that the results could be subjected to a wide range of interpretation. The question never sufficiently addressed is, Cost for whom?

The United Nations Expert Group on the Economics of Disability recognized cost-benefit analysis as "only one tool among many in assessing the impact of rehabilitation services or in deciding which segments of the disabled population should receive services. The greatest danger of misuse," it said, "lies in any decision to exclude disabled people from service provision on the basis of cost-benefit analysis."⁵

Activate the Dialogue

Armed with these so-called hard economic facts that have been verified under practically every type of social and economic system in the world, we move forward into a very cold economic climate.

We have in our hands the information to activate the essential dialogue with planners and economists on their own terms. We have been too modest in obtaining some of the "economic incentives" for our activities that others with larger and more politically vocal constituencies have had the strength to garner for decades. I am speaking here, for example, of tax write-offs and other inducements to make it more profitable for businesses to hire or to provide physical entry to their facilities. As Gerben de Jong has pointed out about the movement to eliminate architectural barriers in the United States, far too much attention has been devoted to only one of many potential methods available to achieve our objectives — the use of legislation and regulations — to the exclusion of other approaches, including economic incentives and supportive technical assistance.

If I may put the issues on a more personal basis, I must tell you that I am beginning to feel insulted when I am told each and every year by our colleagues in every region of the world that the greatest limitation they face in their activities is a shortage of funding and a lack of priority commitment to activities on behalf of disabled people and their families.

I cannot adequately describe for you the trauma I experience in meeting families who are suffering

continued on page 24

continued from page 4

under the burdens of abject poverty provoked by absolutely avoidable disabilities, conditions that never should have occurred to even one member of the family, let alone to several members of the same family, and which as a result of the absence of any type of appropriate intervention have become unbearably damaging.

I cannot tell you of my anger at knowing that governments can dismiss expenditures in the range of a few billion dollars a year as "waste," which recently occurred in the defense establishment in my home country, when that same sum represents the total amount now being spent in the same country for direct rehabilitation services and labour-market interventions such as job programs and vocational rehabilitation. In fact, can you even imagine a social program being treated to a gracious description such as "cost-ineffectivity"? We, too, are speaking of waste: the waste of human potential. Is there any action of greater importance to the national interest than strengthening the capacities and capabilities of the people of the nation? Does any nation have any more precious resource than its people?

If I could draw just a few lessons from analyses of international experience related to the economics of disability, I think the core issues would be:

- productivity, lost as a result of disability and regained as a result of rehabilitation, and

- cost-effectiveness, in determining how we can provide essential services in the most efficient manner.

We must expend more effort to make known the validity of the services we are trying to provide, in the economic terms in which they will be appreciated.

We must recognize that the activities we propose must exist not only as a matter of social equity and citizens' rights, but also as a matter of economic gain to each nation as a whole.

We must act more aggressively to obtain the economic inducements appropriate for our activities, which will transform well-intended legislation and policies into working programs to the benefit of disabled people and their families.

The basis for our strategy is sound and logical: these programs are appropriate and they are economical. They deserve a chance. □

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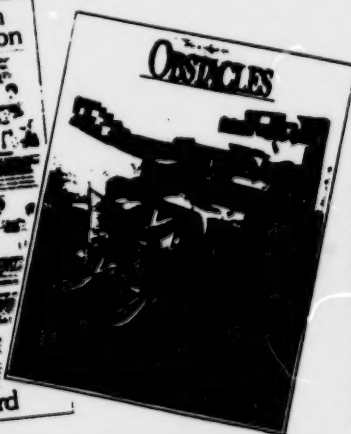
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PHYSICAL DEMANDS ANALYSIS
(P.D.A.)

BY

HANDICAPPED EMPLOYMENT PROGRAM

PHYSICAL DEMANDS ANALYSIS

TABLE OF CONTENTS

INTRODUCTION

IMPLEMENTING P.D.A.

CHECKLIST INTERPRETATION GUIDE

GLOSSARY OF TERMS

ACKNOWLEDGEMENT

This most recent revision reflects the input of many individuals, both inside and outside the Handicapped Employment Program. We wish to acknowledge their input and, in particular, the contribution of Carolyn Hay. Carolyn is an occupational therapist employed by the Human Resources Branch, City of Hamilton. She has helped us to clarify the procedures and to improve the P.D.A. checklist.

Handicapped Employment Program
September 1986

PHYSICAL DEMANDS ANALYSIS

INTRODUCTION

Through job analysis employers acquire data on specific jobs. This information is needed to determine the qualifications required of applicants. The purpose of Physical Demands Analysis (P.D.A) is to assist an employer to identify the physical and environmental components of a job, thus adding additional detail to the job description.

For example, after the P.D.A. has been completed on a specific job, it can be described as involving a specific amount of lifting (as well as the weight to be lifted), twisting, stooping, reaching above the shoulder, etc., each of a certain frequency. This information will provide the vehicle for determining alternate ways of doing the job tasks, to ensure that persons with disabilities are not screened out of jobs.

Ideally, it is recommended that P.D.A. be integrated as a part of a regular personnel system, rather than being utilized on an individualized, "special case" basis. It can provide basic information for use in job advertising, hiring decisions, job rotation and promotion and can be supplemented by more detailed professional analysis (e.g., done by an occupational therapist or ergonomist) where more detail is needed for individual placement.

How does P.D.A. Assist in Matching Job and Applicant?

Once completed, the P.D.A. profile gives the employer greater insight into the physical movements involved to adequately perform the duties/functions of a job. In an interview situation, the P.D.A. information can assist both the employer and the individual in assessing the applicant's ability to do the work.

P.D.A. can also lead to discussions between the job seeker and the interviewer about whether the job duties need to be accommodated through the use of technical aids or other means. Physically disabled persons know their own capabilities and limitations. If provided with specific information about work demands, they will let the employer know what they can and cannot do, and what would need to be accommodated.

Other Benefits of P.D.A.

- o P.D.A. can identify basic health problems on the job and help prevent them. One example is of a situation in which a P.D.A. identified that a position required a great deal of lifting. The incumbents were plagued by back problems. Once identified, the situation was corrected by the provision of a simple lifting device.
- o P.D.A. assists in outreach recruitment. It provides additional information to agencies, involved in placing disabled persons. They are then better able to discuss appropriate positions with their clients and to refer suitable candidates to employers.

- o P.D.A. encourages compliance with the Ontario Human Rights Code: It is a violation of the Code to refuse a person a job on the basis of a handicap, if the person can perform the "essential duties" of a job. Essential duties refers to those duties and responsibilities that are necessary to the performance of the job. The principle of "reasonable accommodation" is inherent in the Code, and in light of pending amendments will probably become an express requirement.
- o P.D.A. assists physicians and other health professionals to assess a candidate's fitness for work. By knowing the physical demands of a job, health professionals are better able to assess an individual's capacity to do a specific job.
- o P.D.A. helps open up the job market. In the past, lack of concrete information about the physical demands of various jobs has resulted in:
 - rejection for employment because the interviewer did not know that aspects of the job could be altered to accommodate the applicant.
 - mismatches between applicant and job.
 - lack of promotional opportunities

By using P.D.A. on all jobs (not just low skill or entry level jobs), employers begin to think about the range of jobs, from mail clerk to senior executive, which people with disabilities could do.

IMPLEMENTING P.D.A.

As a long-range goal, P.D.A. should be implemented routinely as part of an employer's human resource system.

The following steps are recommended for successful implementation:

- o Obtain commitment from senior management to perform P.D.A. Ideally, it should be part of an employment equity program.
- o Communicate with those people who will be using P.D.A. to interview, promote, or do "fitness for work" assessments. Explain the P.D.A. to them and provide training in how to use P.D.A.
- o Where applicable, contact union officials and elicit their support. Include them in decision-making and training.
- o Review the job description prior to performing the P.D.A.. Perform the P.D.A. by explaining the technique to the person whose job is being analyzed. Discuss physical demands. In some instances, it is useful to observe the employee performing the job.
- o Use the information to write a short narrative describing the physical demands of the job. By typing the narrative on the back of the P.D.A. checklist, all the information can be kept to one page.
- o Ensure that the completed P.D.A. is verified and agreed to by the work supervisor. Have it "signed off".
- o Incorporate the P.D.A into the personnel system as part of the job specification. If necessary it can be reduced in size. The P.D.A. can be kept for job interviews to facilitate discussion of technical aids and other job accommodations.
- o Use the information to enhance advertising and outreach recruitment by including the term "employment equity employer", the wheelchair access sign or "physical demands available on request" on all job ads and in outreach to groups and organizations dealing with persons with disabilities.
- o Use P.D.A. for more effective interviewing. The information assists the interviewer to deal with specific aspects of the job, as well as helping to discuss the applicant's disability in strictly job-related terms.

For positions whose major job functions vary considerably depending on the season, workplace demands, etc. so that the position actually involves several different types of work with different tasks and subsequent physical demands, a checklist and narrative summary may be completed for each major job function.

For example, a "Labourer" may typically be assigned to work full-time for 3-month periods in each of the following: snow removal, lawn maintenance, road repair, gulley cleaning, etc. Therefore, each of these job functions would be analysed separately using a separate checklist. The P.D.A. of the position of "Labourer" would then be composed of all four checklists.

In the event that workers are expected to rotate among different positions the narrative summary should then make reference to the P.D.A.s of all positions expected of the worker.

CHECKLIST INTERPRETATION GUIDE

"List of Factors"

The list of physical demands includes all factors to be considered when completing the general physical demands analysis. When two related but differing factors are paired on the same line, the relevant factor(s) should be circled.

"Humid~~(Dry)~~" indicates that the environment is dry only.

Hot/Cold - indicates that both Hot and Cold conditions are encountered and subsequent scoring reflects both.

"Check if Performed"

An "x" in this column indicates the accompanying factor is performed as part of the job as it is currently done. Factors not performed are marked with "-" to indicate they were considered and determined not to be performed.

"Weight"

Both maximum weight to be moved in the job and the usual weight are indicated (i.e. 50 pound weights may only be encountered occasionally, while 20-30 pound items are common and usual). The maximum weight is listed first with the usual weight shown in brackets.

As an example, "50 lbs. (20-30 lbs.)" indicates that the maximum weight ever required to be moved is 50 lbs., but the usual weights to be moved are 20-30 lbs."

Similarly, the "Frequency", of the two weights are scored separately with the usual weight score also bracketed.

"Frequency"

Frequency Scale:

- 0 - Not Performed
- 1 - Seldom Performed
- 2 - Minor Daily Activity; Less than 1 hour
- 3 - Frequent repetition for 1-3 hours daily.
- 4 - Major Job Demand; Maximum ability required: Frequent repetition for more than 3 hours daily.

Frequency indicates the actual time spent performing that factor, and not the entire time span over which the factor may be periodically performed. As an example, in order for "Lifting 50 lb. weights" to be considered at the "3" level of frequency there must be frequent, repetitive lifting of a 50 lb. weight for 1-3 hours daily and NOT just 2-3 episodes of lifting over a 1-3 hour period.

"Comments"

Include examples, explanations, etc.

"Human Rights Considerations"

It is important to distinguish between essential duties and those which are not. As an example, a secretarial job might involve essential duties such as typing from handwritten/typed notes, telephone reception, ordering office supplies etc. Non-essential duties might include photocopying, typing from dicta-tapes etc.

Since job duties can change over time, it is important to review this section just prior to interviewing. Reasonable accommodation of the duties can then be discussed at the interview, if necessary. (Reasonable accommodation can include the provision of equipment and devices, assistance related to performing the job, exchanging of duties with another person, modifications to the job site such as raising a desk for a wheelchair user, flexible work schedules and so on.)

GLOSSARY OF TERMS

Some terms (e.g. sitting, standing, walking) are self-explanatory. Listed below are explanations or terms that may need clarification.

Strength

Lifting - Raising from lower to higher position

Carrying - Move while supporting; transport

Pushing/Pulling - As with carts, trolleys, drawers

Fine Finger Movements - Range of motions, speed, and dexterity required for such things as typing, dialing phone, manipulating nut and bolt, planting, etc.

Handling - To take hold of and lift up; to gather together, collect. (e.g. sorting papers, filing, managing tools)

Gripping - Closing hand around item in order that it be held firmly, as in gripping a hammer or shovel, squeezing a stapler

Reaching - To stretch out the arm

Mobility

Throwing - As in tossing snow with shovel, pitching fertilizer bags onto truck, etc.

Climbing - Includes climbing stairs (noted only when elevator NOT available), ladders, scaffolds, inclines, etc.

Bending/Stooping - Bending forward at the waist, as when filing, standing to work at table, etc.

Crouching - Lowering the body stance by bending the knees (e.g. squatting)

Kneeling - Involves one or both knees touching the ground to support body.

Crawling - Moving while on hands and knees

Twisting - Turning upper body at waist while stationary

Balancing - When on a ladder, scaffold, etc.

Sensory/Perceptual

Hearing - Conversation: face to face or telephone. Other Sounds: phone ring, buzzer

Vision - Far: Seeing objects in the distance (e.g. beyond arm's length)

Near: Seeing objects close (e.g. within arm's length)

Colour: Noted when objects are differentiated by colour only (e.g. colour-coded files).

Depth: Seeing in 3 dimensions; necessary for judging distances, thickness, etc.

Perception - Spatial: Ability to deal with spatial concepts such as above, below, behind, etc., and to accurately perceive the position of objects in relationship to oneself or other objects. Necessary for accurately performing directional tasks, lining up numbers to complete calculations, setting up typing page, etc.

Form: Ability to discern subtle discrepancies or details in form (e.g. ability to discern between a circle and an oval, a dinner and dessert fork)

Feeling - Only noted when touch is the primary means of differentiating between items, gaining information to dictate future actions, etc. (e.g. judging consistency of soil, smoothness of surface)

Writing - Manual (not typing, etc.)

Speech - Includes telephone and face to face speech

Work Environment

Inside Work - Inside a building (e.g. office, shop, garage)

Outside Work - Includes outdoors but in a vehicle enclosure (e.g. truck, cab)

Hot/Cold	}	Refers to extremes only
Humid/Dry		
Dust		
Vapour Fumes		
Noise		

Moving Objects - e.g. overhead cranes, forklifts, motor vehicles

Hazardous Machines - e.g. machines with dangerous moving parts (e.g. snowblower, paper shredder, cement mixer)

Electrical - Exposure to known electrical risk if proper procedure not used (e.g. rewiring jobs)

Sharp Tools - Other than scissors

Radiant Energy - As from a photocopier or VDT

Thermal Energy - As from an open flame or hot surface that could result in burns

Slippery - Refers to predictable work environment (e.g. Iced or oily work environment) and not Irregular occurrences (e.g. water spill in office)

Congested Worksites - Worksite allows little room for movement due to limited area, volume of materials to be stored far greater than space available, layout of work area, etc.

Conditions of Work

Travelling - Travelling away from normal work location (e.g. travelling to other worksites, local errands, in and out of town for conferences)

Work Alone - Nobody else working in the immediate work area (e.g. own office/shop)

Work Independently but in Group - Other employees in the same immediate work area (e.g. own desk within the large general office, works with partner/work crew, etc.)

Deadline Pressure - Refers to regular, defined deadlines, that must be met or else major negative consequences result (e.g. regular weekly computer payroll deadlines) does not refer to pressures created by volume of work, dealing with the public, etc.

Interact with Public - General public; in person or by phone

Operate Equipment/Machines - Includes office equipment, vehicles, tools, etc.



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SAMPLE

Physical Demands Analysis

Position Title: Library Clerk
Department: Library
Date: September 5, 1986
Contact: Jane Doe, Manager
Phone: 933-3333

Physical Demands	Check if performed	Weight		★ Frequency					Comments
		Maximum (Usual)	(Usual)	0 Never	1 Seldom	2 Minor	3 Required	4 Major	
Strength									
Lifting	x	6 (3)				x (x)			The technician is expected to shelve about 100 books a day. Reach must extend to 6'.
Carrying	x	6 (3)				x (x)			
Pushing	x	6 (3)				x (x)			
Pulling	x	6 (3)				x (x)			
Fine Finger Movements	x	6 (3)				x (x)			
Handling	x	6 (3)				x (x)			
Gripping	x	6 (3)				x (x)			
Reaching									
Above Shoulder	x	6 (3)				x (x)			
Below Shoulder	x	6 (3)				x (x)			
Foot Action									
1 Foot	-								
2 Feet	-								
Mobility									
Throwing	-								There are frequent alternating periods of sitting, standing, walking. Use footstool to reach top shelves. Shelves 8" from floor. Books from trolley to shelves.
Sitting	x						x		
Standing	x						x		
Walking	x						x		
Running	-								
Climbing	x					x			
Bending/Stooping	x					x			
Crouching	x					x			
Kneeling	-								
Crawling	-								
Twisting	x							x	
Balancing	-								
Sensory/Perceptual									
Hearing									At circulation desk. Telephone. Call numbers. Call numbers. Checking books out. Telephone/circulation desk. Library environment.
Conversation	x						x		
Other Sounds	x					x			
Vision									
Far	-								
Near	x							x	
Colour	-								
Depth	-								
Perception									
Spatial	-								
Form	-								
Feeling	-								
Reading	x							x	
Writing	x					x			
Speech	x						x		
Work Environment									
Inside Work	x							x	
Outside Work	-								
Hot/Cold	-								
Humid/Dry	-								
Dust	-								
Vapour/Fumes	-								
Noise	-								
Moving Objects	-								
Hazardous Machines	-								
Electrical	-								
Sharp Tools etc.	-								
Radiant/Thermal Energy	-								
Slippery	-								
Congested Worksites	-								
Conditions of Work									
Travelling	-								Circulation desk.
Work Alone	-								
Work Independent but Ingroup	x								
Deadline Pressures	-								
Interact with Public	x								
Operate Equip./Mach.	-								

Accessibility to person using wheelchair ☒ Aisles between stocks are wide enough to accommodate a wheelchair. Entry turnstiles are also accessible.

Human Rights Considerations**

Essential Duties

Shelving library materials, staffing circulation desk, maintaining circulation files.

Non-essential Duties

Photocopying, telephone work.

**Review duties before interview.

Discuss reasonable accommodation at interview.

*Frequency (The frequency of maximum weight should be shown without brackets and the frequency of usual weight, within brackets)

0 - Not Performed

1 - Seldom Performed Not Daily

2 - Minor Daily Activity, Less than 1 Hour

3 - Frequent Repetition, for 1-3 Hours Daily

4 - Major Job Demand, Maximum ability required,

Frequent Repetition for more than 3 Hours Daily.

Library Clerk

The technician is expected to shelve approximately 100 books each day. These books vary in size, shape and weight (5-6 lbs. max.). The books are carried and put in their proper spot on the shelf (book trolleys are available). This involves reaching above and below shoulder height approximately 20-50 times a day, as well as frequent twisting to remove books from trolley and place on shelves. There are frequent alternating periods of sitting, standing and walking. A certain amount of grip strength and hand function is required to grasp books, write, and use the telephone. Verbal communication skills are helpful. Sight is necessary and hearing skills are an asset.

Essential duties include shelving library materials, staffing the circulation desk and maintaining circulation files. Photocopying and telephone work are non-essential duties and would not be required if the person was unable to perform these duties.

Sept. 9/86
Date

Jane Doe
Immediate Supervisor
Jane Doe
Manager

JOB ANALYSIS AND WORKPLACE DESIGN

RESOURCES FOR REHABILITATION

BY

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Job Analysis and Workplace-Design Resources for Rehabilitation*

JOHN W. PRIEST, P.E., and RICHARD T. ROESSLER, Ph.D.

ABSTRACT: To improve the employment outcomes of persons with disabilities, vocational rehabilitation must utilize the skills of a wide variety of professions. One of the newer members of this rehabilitation team is the industrial engineer. Skills of the industrial engineer such as job analysis and workplace design provide the basis for identifying job opportunities and removing workplace barriers. This article describes different methods of job analysis in terms of the information they can provide industry in its efforts to accommodate workers with disabilities. A specific application of the physical demands analysis method recently developed by the Materials Development Center (University of Wisconsin-Stout) is discussed. The method provides the industrial engineer with easy-to-use checklists for evaluating job tasks and facilities.

BOTH SOCIETY AND INDUSTRY have a vital stake in vocational rehabilitation of persons with disabilities. The entry or reentry of disabled individuals into the labor force, however, requires a systematic team approach by many diverse professions. This includes professions ranging from the traditional ones in medicine and rehabilitation counseling to those emphasizing engineering technology, such as industrial engineering.

The entry or reentry of workers with disabilities into the work force is economically justifiable both for industry and society. For industry, economic benefits include federal income tax deductions for hiring workers from certain targeted groups and for improving building accessibility. If the individual were disabled on the job, a return to that same job minimizes the company's worker's compensation rates and training and personnel costs for a replacement. Society benefits in that its members are restored to meaningful roles. As a result, fewer state and federal financial resources are expended to support the individual.

Many industries have found disabled workers to be excellent employees. In a 1981 survey of its workers with disabilities, du Pont found that, "like their nonimpaired co-workers, handicapped employees are safe, productive, and dependable."¹ P. 6 For workers with disabilities, no increases in worker's compensation costs or lost time due to injuries were reported. Most of the workers with disabilities required no special work arrangements. Moreover, the survey also reported that a) 96 percent of the disabled workers rated average or above average in job safety, b) 92 percent rated average or better in job performance, and c) 85 percent rated average or better in job attendance.

In addition to providing economic benefits,

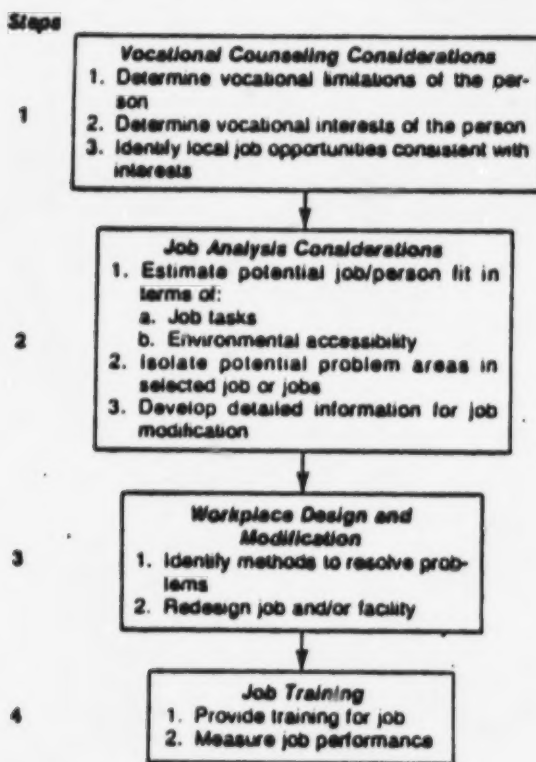
employment of individuals with disabilities can also help business meet affirmative action regulations. The industrial engineer can play a vital role in this process by identifying and helping to remove barriers to employment of the worker with a disability. Removing physical barriers in the workplace opens more jobs for disabled workers which in turn increases industry-wide compliance with affirmative action guidelines. Most of the adaptations required to remove employment barriers have been found to be inexpensive and simple to implement. For example, in a survey of their disabled workers, Sears and Roebuck found that the cost of job accommodations ranged from \$70 to \$700.¹⁵ In a recent survey (1981-82) of 367 federal contractors in the private sector, Berkeley Planning Associates reported that 79 percent of the respondents did not view the accommodations they made for workers with disabilities as prohibitively costly.¹⁰ In fact, 51 percent of the accommodations were made at no cost, while 30 percent cost less than \$500. Only 8 percent of the changes cost more than \$2,000.

The steps necessary to adapt jobs for disabled persons are shown in Figure 1. However, since counselors in vocational rehabilitation are generally trained in the social sciences, they do not have the skills to perform all of these tasks. Hence, vocational rehabilitation must be viewed as a multidisciplinary

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SPECIAL ARTICLE

Figure 1.—Steps to Effective Adaptation of Jobs



task. In fact, England and Holland have had great success in combining traditional rehabilitation approaches with industrial and management techniques.¹³

The role of the industrial engineer in employment of disabled persons, therefore, is in identifying potential problems in job demands and/or environmental accessibility and selecting procedures for modifying

the workplace and job tasks to accommodate the individual. This can be accomplished through the techniques of job or task analysis and workplace design. This article will describe different methods of job analysis and how they can provide industry with sufficient information to accommodate workers with disabilities.

Job Analysis and Workplace Design

Historically, job analysis and workplace design for disabled persons have been performed somewhat informally by either the rehabilitation counselor or the disabled worker. Several fields of study are now actively joining with rehabilitation to systematically improve job analysis techniques and, therefore, job opportunities for disabled persons. These areas include industrial engineering, which focuses on improving the industrial workplace; ergonomics or human factors, which concentrates on the human element in a system; and biomechanics, which looks at the mechanical forces involved in human performance. These fields emphasize a pragmatic or engineering type of approach—i.e., step-by-step job analysis methodologies that are very cost-effective on a per-job basis.

Job analysis and workplace design techniques can be used effectively in industry to increase productivity, reduce operator errors, and lower the skill requirements necessary to perform a job. Greater application of this knowledge, however, is needed in vocational rehabilitation, particularly in rural areas where specialized help is not readily available. Promising responses to this gap in the utilization of technology and industrial engineering for disabled people exist in the concrete aids, devices, and techniques being developed by the rehabilitation engineering centers and in the practitioner oriented manuals for job analysis and workplace design prepared for use with disabled persons.^{2,4,9,12,14}

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Dr. Roessler is professor of rehabilitation education at Arkansas Rehabilitation Research and Training Center,

University of Arkansas, Fayetteville. Roessler has co-authored numerous textbooks and articles on various aspects of vocational rehabilitation. With Dr. Priest, he is a member of the Task Force for Job Design for the President's Committee for Employment of the Handicapped. Dr. Roessler is the co-author of Case Management and Rehabilitation Counseling and Foundations of the Vocational Rehabilitation Process (second edition), published by University Park Press.

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Job Analysis to Accommodate Disabilities

Job analysis can be defined as the investigation and collection of information concerning work tasks. This information can range from macrodescriptions, such as lathe operator, to microdescriptions, such as an operator's hand movements. As a result, there are hundreds of different methods and techniques that can be used to analyze work tasks. In part, the appropriate strategy to employ depends upon the goals of the company or agency that is providing the resources to perform the analysis.

Job analysis for the worker with a disability has goals and objectives that may exceed the objectives traditionally found in industry. For example, this evaluation for the disabled person must include environmental items such as facility access, emergency procedures, and transportation. In order to provide the basis for accommodating disabled workers, job analysis documentation should:

1. Easily identify possible job opportunities.
2. Provide detailed information for evaluation of physiological, intellectual, and social job requirements.
3. Include accommodation information for possible workplace or facility modification.
4. Identify potential problems for specific disabled individuals.
5. Document training requirements.

In addition, the method should require minimum time and training for personnel performing the analysis.

As mentioned before, job or task analysis can describe a job in various levels of complexity. These range from one paragraph job summaries to micromotion descriptions. Figure 2 shows a sample list of various types of job analyses. An example of one of the more macromethods is the "functional job analysis" used by the Department of Labor and developed by Sidney Fine. Using a specially designed questionnaire, Department of Labor personnel gather information from industry and publish the results in the *Dictionary of Occupational Titles* (1977). The questionnaire collects information on job function, equipment used, training and physical demands, and general descriptions of each job task. Although this method is sufficient for many governmental agencies and personnel departments, it does not provide the details necessary to evaluate job requirements for disabled persons.

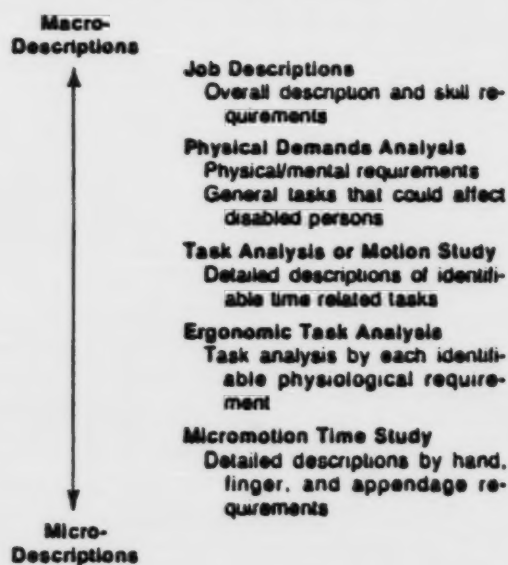
The remaining informational levels of job analysis (see Figure 2) are significant in that the methods change from a description of the job to an analysis of the job task requirements; thus, the methods are called task analyses. These micro levels of job analysis

concentrate on time or physiological requirements of performing the job. The emphasis on the actual task requirements results in information that can often be utilized for vocational rehabilitation. The first step of these task analyses is to identify details of the present work method. This could be accomplished by several different techniques, including standard task analysis, flow process charts, activity charts, micromotion charts, film analysis, and time study. Each of these methods provides data on certain aspects of human activity and its interaction with the job task. The task analysis method is the most effective for identifying barriers.

To perform a task analysis, the job must be described in separate, identifiable units of work. Each of these units is then analyzed for job requirements. As they are identified, these requirements are compared to the capabilities of a disabled individual or disabled populations. If there are tasks that cannot be performed, the industrial engineer can then possibly redesign or modify the job task utilizing traditional industrial engineering methods. These methods, such as ergonomics, human factors,¹² and work simplification can result in installation of jigs or fixtures, redefinition of the procedure for doing the task, modification in the positioning of the worker, and so forth.

A problem with utilizing traditional methods of task analysis for disabled persons has been their emphasis on job performance and time standards. Productivity has been the focus based on the assumption that the worker has no disability-related limitations.

Figure 2.—Levels of Job Analysis



SPECIAL ARTICLE

In addition, these methods have not addressed nonproduction-related considerations such as physical barriers, communication requirements, and environmental conditions. As a result, several job analysis methods have been developed to specifically address the needs of disabled persons.^{4,9} The next section provides a detailed description of job analysis method designed for use with disabled workers.

Physical Demands Job Analysis

Lytel and Botterbusch recently introduced a systematic method that bridges the gap between job description summaries and detailed task analyses for disabled persons.⁹ This method, the "Physical Demands Job Analysis," was developed at the Stout Vocational Rehabilitation Institute through a grant from the National Institute of Handicapped Research. Developed specifically for evaluating the interrelationship of disability-related limitations and job demands, the Physical Demands Job Analysis approach is both efficient and effective. Specifically, use of the system results in identification of many potential problem areas. The forms utilized in the method are self-explanatory and provide a simple checklist for the industrial engineer. Definitions are included for areas where some questions may occur. Lytel and Botterbusch have also developed a set of guidelines for specific disabilities that match the items on the job analysis checklists. This checklist type of data collection allows a company to computerize the results for future job matching.

The method uses the following seven forms for performing the job analysis: the Environmental and Social Conditions Form, the Job Tasks Form, the Task Analysis Form, the Visual Demands Checklist, the Strength Requirements Form, the Physical Barriers Form, and the Summary Form.⁹ The Environmental and Social Conditions Form addresses considerations such as temperature, humidity, noise, vibration, floor surfaces, lighting, and other potential environmental problems for disabled persons. The social part of the form encompasses communication requirements of the job, scheduled working hours, and protective equipment that the individual is required to wear. Communication requirements include social interactions on the job, production efforts with co-workers, interactions with customers or the public, and supervision of others. The information from this checklist provides an overview of the physical and social environment of the job.

The Job Tasks Form provides a simple description of the major tasks, percentage of time on this particular task, and whether the work task is critical. The entire job is usually broken down into approximately five work tasks. This small number of task descrip-

tions is sufficient for providing a basis for the Task Analysis Form. Each job task is then analyzed using the Task Analysis Form. The items in the Task Analysis Form are as follows: job elements, tools and work aides, machines and equipment, most common posture, height and weight in manipulating objects, handling objects (manipulation requirements), moving objects (carry, push, pull), speech and hearing, control placement and driving, and infrequent actions. This level of task analysis is normally sufficient for identifying potential problem areas. When problem areas are identified, a more detailed task analysis using ergonomic techniques is required.

Since vision can often be the disability of the worker, a special form is included to evaluate the visual job requirements. The areas of analysis are visual communications such as reading, visual measurement and mobility, and the effects of reduced vision on mobility in the work area. The next form is used to classify the strength related requirements of the job. A brief outline of the items covered in this part of the analysis includes degrees of strength in lifting; time duration of walking, standing, and sitting; extended or heavy physical demands on the shoulders, back, whole body, or voice; and amount and duration of driving requirements.

Since its concerns are often overlooked in traditional job analyses, the next to last form listed is perhaps the most important for the industrial engineer. The Physical Barriers analysis provides information on access to and within the plant facilities. Although this information is nonproduction related, it is often a problem area when accommodating disabled workers. Items such as building entrances, parking, elevators, restrooms, and water fountains must be considered. The checklist provides the industrial engineer with a means for evaluating the company's facility without formal training in this area. The last form is a summary of the considerations from the previous analyses. This summary form provides the basis for comparing job requirements with the individual's disabilities.

The authors recently utilized the Physical Demands Job Analysis approach in a project focusing on placement of rural disabled persons. The specific objectives of the project were to:

1. Identify high turnover/hard to fill or high employment potential positions in local business and industry.
2. Identify the major tasks and production level standards of the jobs (job analysis).
3. Institute vocational training in those positions at a local sheltered workshop using job analysis data to create simulated work sites.
4. Train individuals in the positions in the work-

shop to ensure that they can meet required job standards.

5. Recommend selected individuals for employment in participating industries.
6. Provide follow-up assistance to trainees and employers.

In the initial stages of this project, five jobs with three different companies were analyzed. The Stout state checklist approach worked very well, especially for nonproduction considerations such as facility access and communication requirements. The jobs included food processing (2 positions), industrial sewing, garment inspection, and computer operation. The time to analyze a job averaged 20 minutes with an additional 15 minutes required to evaluate each plant facility.

Information collected from task analyses, such as the ones done in the rural project, could then be compared to the individual's disability. Although at times no modifications to the job will be required, most placements will require some minor modifications. The industrial engineer may then need to perform a more detailed task analysis utilizing ergonomic techniques in order to provide the level of information required. From this information, the engineer is then ready to utilize traditional workplace design techniques.

Job Design and Modification

Industrial engineering job design can improve a work task by:

1. Eliminating unnecessary parts or tasks of a job.
2. Combining tasks or rearranging other parts.
3. Simplifying necessary parts of the job.

These objectives are accomplished by systematic step-by-step methods. Although these methods may vary slightly in detail, most approaches can be summarized into an overall four-part pattern:

1. Select the tasks to be improved.
2. Identify details of the present method.
3. Challenge every detail.
4. Develop a better method using techniques such as motion economy and ergonomics.

Several successful approaches and techniques have been developed which address the job modification process, including those by Liles and Kapur,⁷ Longnate and Armstrong,⁸ Malzahn,¹¹ and Munn.¹² Additional information for utilizing new technology for accommodation is available from the rehabilitation engineering centers listed by Volin.¹³ Redesigning the job and/or the facility to accommodate the disabled worker completes the role of the industrial engineer in the rehabilitation process.

Summary

Integration of persons with disabilities in the labor force, desirable both for industry and society, often requires modifications in both the work task and the work environment. These modifications evolve from careful consideration of the interaction between a variety of disability-imposed limitations and specific work demands or conditions. To accomplish such a comprehensive analysis of work tasks and nonproduction considerations, the Physical Demands Job Analysis format developed by the Stout Vocational Rehabilitation Institute is recommended. In several applications, the Stout method was found to be an effective and efficient job analysis technique.

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SPECIAL ARTICLE

there is reasonable and logical justification for so doing. The student may also request a copy of modifications and amendments to the IWRP.

If a postsecondary student is a client of the State Vocational Rehabilitation program, he/she must meet with the rehabilitation counselor to insure that needed support services are included in the IWRP. It is important to do this early to allow necessary time for authorizations for services to be received by the school business office and Student Services Office.

It is very important to get paperwork completed before it is due so that there is time to deal with the unexpected. Don't assume that VR and your school will take care of everything. You as a client/student have a major responsibility to meet deadlines, keep your VR counselor informed of school requirements and due dates and to let him/her know of your progress toward your academic and vocational goals. The client is in charge of his/her rehabilitation program

and the counselor/agency act in an assistant capacity.

What If I Disagree With My VR Counselor?

Differences of opinion concerning rehabilitation services can develop between a counselor and client. If you don't agree with the way your case is being handled, talk it over with your VR counselor. In most cases the two of you will be able to solve the problem. If you still don't agree with your counselor you may discuss it with your counselor's supervisor.

The supervisor will examine your concern and let you know his/her decision. If you are still not satisfied, you may request a review by the Regional Director. This is called an Administrative Review.

Your problem should be presented in writing to the Regional Director. Your VR counselor/supervisor must assist you with this review. If dissatisfied with the decision, you can request a Fair Hearing.

A Fair Hearing is a formal procedure. It is held before the State Director or his designee. The Fair Hearing is your final opportunity to ask for a change in the way your case is being handled inside the VR process.

When Will VR Services Stop?

When Will VR Services Stop?

Clients are served until successfully rehabilitated or a determination is made that the vocational rehabilitation goal cannot be achieved. Under the vocational rehabilitation program, clients are not considered "rehabilitated" until the state VR agency determines that they have been suitably and satisfactorily employed for at least 60 days.

For the address of your State Vocational Rehabilitation Agency request a "State Agencies List" from the HEATH Resource Center.

Prepared by Nancy L. Stout, resource coordinator with the HEATH Resource Center, a project of the American Council on Education, funded by the Department of Education. Reprinted with permission. Prepared under contract No. 300-80-0837 with the U.S. Department of Education. Single copies of this article are available free of charge from HEATH Resource Center, One Dupont Circle, N.W., Washington, DC 20036; tel. (202) 833-4707.

SPECIAL ARTICLE—Continued from page 205

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THE SELF-CONCEPT OF DISADVANTAGE:
FACTORS WHICH FACILITATE OR HINDER CHANGE

BY

W. OGIONWO, B.A.,M.Sc.,Ph.D

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UNIVERSITY OF IBADAN, NIGERIA



the self-concept of disadvantage: factors which facilitate or hinder change

by W. Ogionwo

The successful performance of many actions, whether physiological or social, is often dependent not only upon the nature of the action and other external factors, but also on the individual's perception of his own ability to do the action. This seems to be particularly true of the physically handicapped, as has been shown by studies in the field of disability. For example, studies by Hewitt (1949), Markowe *et al.* (1955), Richardson (1956), Williams (1958), Wing (1960) and Bronks (1968) have all documented the fact that, in the field of industrial rehabilitation of disabled people, the major obstacle to successful rehabilitation is not so much the manifest physical disability as the acquired social and psychological factors surrounding the disability.

The purpose of this paper is to indicate how those acquired social and psychological factors hamper or facilitate the successful performance of handicapped persons. More specifically, the intention is:

- 1) to identify some of the ways in which the disabled perceive their disability and how they relate it to their self-concept through a socialization process; and
- 2) to consider how this self-concept affects successful performance.

From a social psychological standpoint, the best theoretical attack on the problem seems to be a two-stage one. The first stage considers the process of socialization of the disabled, particularly by the family members and the rehabilitation school or unit. The question at this stage is how the disabled comes to receive, and to accept, the self-concept of disadvantage. It is clear that a process is involved here: a role is to be learned and played. This implies both the giving of a role ("you are mentally ill", "... physically handicapped", "... only fit to do simple tasks", etc.) and the willing or unwilling acceptance ("I am physically handicapped", etc.) of that role. The issues to investigate at this stage, then, seem to be:

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- a) the persons who are crucial as role-definers and the nature of their power in imposing their definition of the self-concept of disadvantage; and
- b) the adjustive mechanism which the disabled is apt to display in order either to accept or resist this self-concept of disadvantage.

Whereas the first stage deals with the process of "socialization" and the development of the disabled's self-concept prior to the performance of given tasks, the second stage covers the measurement of successful performance of these tasks. Disabled people, prior to the time of their disability, had certain capacities. But owing to the intervention of role-definers at that strategic point, some disabled persons may come to have self-concepts which lead them to operate below their true capacity and hence to be at a disadvantage when compared with their peers.

Developing a new self-concept

The term "socialization" is no longer restricted to the learning experiences of the young child; it is used generally to identify a life-long process. Broadly it is used to refer to the interactional process whereby the individual is made to learn to take on behaviour appropriate to the expectations associated with new positions he occupies in a group, an organization or society at large.

Thus, socialization is used here to refer to the process whereby a category of people, the handicapped, are made to take on behaviour appropriate to the expectations associated with their new position as physically disabled persons. They are being "socialized" into a new life, a new way of living and of doing things. During this period the disabled learn the roles and role expectations that are presented to them by the main socializing agents. These expectations of behaviour are dependent upon the sub-cultural patterns of the groups to which they belong. Since in this process the disabled learns his role expectations from others, he also learns from their reactions to his behaviour what sort of image they have of him. In other words, he comes to see himself as others see him. Thus, his identity is created for him by those with whom he interacts.

Identity may have several dimensions; physical, intellectual, temperamental, etc. But for the purposes of this paper, it is restricted to the physical aspect. During the process of socialization, some disabled people are, in effect, told: "You are lame", "... somewhat blind", "... weak and, therefore, can do only simple tasks", "... you are weak, but it doesn't matter as long as you look after yourself", "... you are now lame, but you will get by if you always try hard", etc.

The concept of "power" is central here. At this stage in life, the disabled is marked by powerlessness and hence by dependence. If some of his role-set (on whom he depends) define him in such a way that he is at a disadvantage, then he is likely to see himself in that way. Thomas (1966) has shown that when those around a child behave towards him as though he had a greater degree of physical handicap than he actually has, the child is often put under the disadvantage of a "fictitious handicap". Such findings lead us to believe that self-concepts of disadvantage can be learnt so thoroughly that an individual may come to perform at a level below that of which he is, in fact, capable. In what follows, we will attempt to examine:

- a) how the disabled individual develops his self-concept of disadvantage; and
- b) how this self-concept affects successful performance.

Of course, it seems reasonable to expect that there may be some disabled who, through personal predisposition and associative mechanisms (e.g. selective

interaction, selective perception, selective retention, etc.) may resist accepting such definitions of disadvantage. In such cases, we will need to explore the adjustive processes that make the resistance possible.

The survey: methods and scope

The data for this paper are based on interviews carried out among a sample of disabled soldiers in a rehabilitation home at Oshodi in Lagos, Nigeria. Two categories of people were interviewed: the physically disabled inmates in the unit, and the medical, para-medical and other staff involved in the unit's work.

We wanted to know from the first category their attitudes and feelings about their disability, their hopes and plans for a "normal" life in the future, and their perceptions of some general problems of the disabled. Specifically, we attempted to sample behaviour in the following areas: (a) psycho-social effects of physical disability; (b) value change systems; and (c) behaviours indicative of "positive" and "negative" acceptance of disability (see the list below).

ACCEPTANCE OF DISABILITY SCALE

1. My particular disability always makes me feel inferior.
2. I do not feel all right amongst people who are not disabled.
3. My mates might stand my presence but do not accept me now as they used to.
4. I can talk about my disability freely with anybody, without feeling awkward about it.
5. In my opinion, I am not disabled.
6. It is very easy to exaggerate bad points of a disability.
7. My disability does not bother me when doing my job.
8. I feel half the man I was.
9. I cannot help being a burden to someone in my present condition.
10. A man's worth in the eyes of others does not depend upon his health.
11. The future is just as bright for the disabled worker as it is for the fit man.
12. Planning for the future, as far as a job is concerned, is out when one has my particular disability.
13. Life is not worth living with a disability that stays with one throughout life.
14. My disability does not make me feel awkward in the company of other people.
15. My mates will go ahead, while I will be left behind.
16. When people who know of my trouble show some kindness to me, I always feel it is because they pity me, not because they like me.
17. The nature of my condition bothers others, not me.
18. I am always thinking of my particular disability.
19. When one becomes disabled, the desire to better oneself is lost.
20. People look down on the disabled even though they try not to show it.
21. Disability to me is a shameful misfortune which denies one all the important satisfactions of life.
22. A disabled body leads to a disabled mind.
23. I am not at all frightened by my present condition of health.
24. I get so busy with the problems of living that I do not give any thought to my disability.
25. When one has lost one's health, one has lost everything.
26. I have completely learned to live with my disability now.
27. Employers tend to regard disabled people as second class workers.
28. I always try to equal or better the standards of the able-bodied worker in all I do at work.
29. People should forget what has happened to them in the past and face the problems of living for the future.

In addition, we sought factual information on such matters as religion, educational level, patient-staff relationships, types of tasks performed, etc.

TABLE 1: COMPOSITION OF SAMPLE POPULATION OF DISABLED

Diagnostic category	Composition	
	No.	%
1. Amputees	10	15.9
2. Injury and disease to head and trunk	21	33.3
3. Injury and disease to heart and circulatory system	8	12.7
4. Injury and disease to respiratory system	3	4.8
5. Injury and disease to digestive system	5	7.9
6. Ear and eye defects	11	17.5
7. Skin and cellular disorder	4	6.3
8. Others	1	1.6
Total	63	100.0

A total of 68 disabled residents were finally interviewed, although the original aim was to obtain a sample of 100. However, the effective sample which was analysed (for this category of subjects) is less than 68, since we had to exclude five cases who failed to complete the interview for various reasons. Table 1 shows the number and percentage falling within each of the diagnostic categories.

For the second category of subjects, we depended mainly on open-ended, non-directive questions and the idea was to give the respondent ample opportunity to express his own evaluation and interpretation of the problems of rehabilitating the disabled. Specifically, we probed for the following:

1. How the staff perceived the physical conditions of the disabled residents: the degree of physical disability, whether this disability was responding satisfactorily to therapy, whether disability tampered with successful performance, etc.
2. Opinions on different approaches to the care of the disabled in general.
3. Types of tasks disabled residents usually performed and their evaluations of individuals.

The socialization process of the handicapped and its pitfalls

The first hypothesis we sought to examine was that the very process of socialization, which the system adopts with the best of intentions to ensure that the disabled person should live a full life, is the very mechanism by which some disabled individuals come to be confirmed in the self-concepts of disability. There is no implication that the socializing agents ever label the disabled along any specific dimensions other than in good faith. It is the effect and the possibility of a "fictitious" self-concept of disability that are at issue.

The doctors, nurses, social workers and other categories of personnel involved in the rehabilitation of the disabled are there to carry out the cognate aims of the rehabilitation centre: to "help" the disabled physically and to aid them develop their talents and capabilities in a way that can enable them to "live again". They therefore consider it their prime duty to encourage the disabled to know the objective reality of their situation. When asked: "Must you make the handicapped aware that he is physically disabled?", many of the workers felt it was absolutely necessary, so as to make the person concerned aware of his limitations and help him to act accordingly. Consequently, they never hesitated in telling the

handicapped the degree of his physical disability: "...you're lame", "...you're so weak that you cannot do any strenuous work", "...oh, no, you can't do that, please don't try", "...do you think you'll succeed, given your present condition?" "...your condition is not so bad, you can make it if you try harder", etc.

This attaching of "labels" is done not only verbally but also through "certification" of the disabled (as "weak", "blind", "mentally unstable", "failure", etc.). As Garfinkel (1956) has stated in another context, this has the following consequences:

- a) modification of self-image of the disabled, who tends to internalize those labels attached to him; and
- b) development of new expectations concerning his capacities by other members of the community aware of and responding to the attached labels.

These processes, in turn, may lead to:

- c) alienation and isolation of the disabled with denial of access to "normal" role, thus paving the way for
- d) adoption of self-concept of "disadvantage" with the development of separate values and greater likelihood of being more permanently confirmed as a disadvantaged person.

As significant others see us

In an attempt to assess the power of these role-definers, perceptions of handicaps by the staff and the disabled were compared. Table 2 shows the mean scores and analysis of variance for ratings of three perceptual types pertaining to the disabled. The table shows a striking degree of correspondence in the size of the mean scores. In no instance are there statistically significant differences between comparable scores. These similarities lend support to our hypothesis of metaperceptual congruence between the disabled and the staff, which makes the residents see themselves in the way they were seen by the significant others.

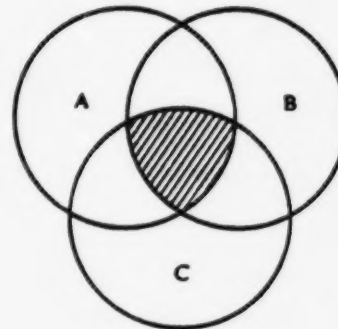
TABLE 2: MEAN SCORES AND ANALYSIS FOR RATINGS OF THREE PERCEPTUAL TYPES PERTAINING TO DISABLED IMMATES

Scale	PERCEPTUAL TYPE 1		PERCEPTUAL TYPE 2		PERCEPTUAL TYPE 3		F	P
	X	SD	X	SD	X	SD		
1. Strong—weak	3.2	1.30	2.8	1.12	2.6	0.93	6.31	.01
2. Efficient—inefficient	5.2	1.22	3.9	1.34	4.7	1.33	9.44	.01
3. Confident—despairing	2.3	1.19	2.9	1.63	3.0	1.72	6.36	.01
4. Balanced—unbalanced	5.4	1.30	3.8	1.72	4.5	1.55	7.12	.01
5. Adequate— inadequate	2.9	1.36	3.3	1.14	3.1	1.16	6.51	.01
6. Intelligent—unintelligent	4.7	1.49	3.6	1.96	4.4	1.96	7.19	.01
7. Hopeful—hopeless	3.1	1.69	3.5	1.84	3.6	1.12	4.34	.01
8. Industrious—indolent	5.5	1.84	4.2	1.25	4.9	1.4	5.62	.01
9. Sociable—unsociable	4.2	1.03	3.6	1.9	3.9	1.66	4.02	.01
10. Fit—unfit	3.9	1.42	3.0	1.41	3.1	1.57	4.54	.01

Note: Scores range from 1-7; positive = 5-7; neutral = 4; and negative = 1-3. Perceptual type 1: The disabled's self-perception, 2: The disabled's perception of the way the staff perceive him, 3: Staff's actual perception of the disabled.

Borrowing from Bakare (1977) we can present the above finding in a diagrammatic form:

FIG. 1: A THEORETICAL MODEL OF METAPERCEPTUAL CONGRUENCE



In the diagram, A stands for the disabled person's perception of himself, B for the disabled person's perception of how the staff perceive him, and C for how the staff actually perceive the disabled person.

This finding of perceptual congruence and, particularly, its corollary (i.e. the tendency to develop self-images along the lines defined by others) seems to accord with a number of findings in the USA and elsewhere. We have already referred to the study by Thomas (1966), which showed that those around a child may behave towards him as though he had a greater degree of physical handicap than he actually has and thus put him under the disadvantage of a fictitious handicap. It is perhaps in the field of intellectual identity that there is most relevant data to underline the point we seek to make here. Work in the USA by Brookover *et al.* (1964) showed that children in early adolescence definitely come to have self-concepts of their own ability along such specialized dimensions as those of arithmetic, English and social science. Furthermore, these self-concepts can be altered and it would seem that parents of children of this age have more power to redefine such self-concepts than do teachers or school counsellors (Brookover 1966).

The analysis so far has shown that the staff in a rehabilitation unit are important role-definers who have tremendous power to make their definitions "stick" on disabled people. Consequently, the disabled tend to see themselves in the way they are seen by these role-definers.

Generalized self-image or a variety of specific perceptions?

To carry the analysis a stage further, we sought to examine whether the disabled person had a generalized self-image of himself, or whether there were many self-images, each specific to a domain of experience. In order to determine the number and nature of the basic self-images of the disabled, we factor-analysed a set of 29 items, all of which essentially asked how the handicapped accepted his disability.

TABLE 3: ROTATED MATRIX OF FACTOR LOADINGS

	I	II	III	IV	V	VI	VII	VIII
1	.58							
2	.62							
3	.61							
4		.45						
5		.51						
6			.49					
7			.36					
8		.48						
9				.61				
10					.55			
11				.48				
12		.50						
13					.39			
14						.44		
15	.38							
16	.41							
17					.57			
18		.39						
19			.41					
20		.62						
21		.43						
22								.39
23							.56	
24	.45							
25				.39				
26	.61						.61	
27								
28								.45
29						.53		

Each item was correlated with every other item and eight factors were extracted from the 29×29 matrix of correlation coefficients. The rotated loadings are shown in Table 3, while the rotated first order factors and their names are given in Table 4. One can interpret the latter table by thinking of each factor as a hypothetical scale where the factor loadings are correlations between each item and the scale. The results, as shown by the table, indicate that the handicapped does not have generalized attitudes towards his disability, but rather that there are at least eight factors which are relatively independent of one another.

By examining the content of the items, which had high loadings on a factor, we arrived at an interpretation of the factor. There are three stages at which the

TABLE 4: ROTATED FIRST ORDER FACTORS IDENTIFIED

Factor No.	Percentage variance	Names of factors as interpreted	Item nos. forming the scale *
1	18.43	Social loss	1, 2, 3, 15, 16, 24 and 26
2	11.93	Succumbing	4, 5, 8, 12, 18, 20 and 21
3	10.04	Obliterative adjustment	6, 7, and 19
4	9.39	Subordinating physique	9, 11, and 25
5	8.88	Coping	10, 13, and 17
6	8.63	Enlargement of values	14, and 29
7	7.49	Accommodation	23, and 27
8	8.12	Over-compensation	22, and 28
8	82.91		29

* The actual items forming the scale are given in the list referred to on page 218

judgments of researchers are usually involved: the original selection of the items, the decision as to how many factors to extract, and the interpretation of the factors. In this case, items reflected, but did not exhaust, various areas of experience of disability. Factoring was stopped when factor loadings became too small to yield interpretable factors, and the naming of factors was influenced by the thinking that went into the original item preparation. An interpretation of each of the eight factors now follows:

Factor I: Social loss—The five items on this scale seem to portray the basic desire for social acceptance by others as equally worthy and the desire to be important in the life of others. The items convey the content of social loss as felt by the disabled and accounted for 18.43% of the total variance.

Factor II: Succumbing—This factor seems to deal with feeling of despondency—the feeling that one's total personality has been ruined by one's disability. We have used the term "succumbing" to describe this factor since, as Wright (1960) has observed, persons with such an attitude of mind tend to see the difficulties of disability "... as a quagmire through which there is no path". This is similar to one of the value systems which Dembo *et al.* (1956) identified as "Spread". This accounted for 11.93% of the variance.

Factor III: Obliterative adjustment—This factor portrays the tendency for the individual to assume that nothing has happened. It is the repression of any recognition of the effects of disability. It is what Landis and Bolles (1942) referred to as an "obliterative" type of adjustment. The percentage of variance was as much as 10.04%.

Factor IV: Subordinating physique—This factor deals with the individual's tendency to perceive physical characteristics as being less important for evaluating a person than factors such as personality, social relationships, etc. (cf. Dembo). This factor accounts for 9.39% of the variance.

Factor V: Coping—This factor deals with the coping aspect of attitude to disability. It is the tendency for the individual to leave the bitter past behind and look forward to the future and work towards it with hope. This factor contrasts with factor II and accounts for 8.88% of the variance.

Factor VI: Enlargement of scope of values—This factor describes the reaction of the individual that disability is not all that is in life; that he still has generous endowments of other qualities which can help him hold his own among other people. Borrowing from Dembo's concept, we have referred to this factor as "enlargement of scope of values" and it accounts for 8.63% of variance.

Factor VII: Accommodation—The items making up this factor describe the way the disabled person learns to live with his disability without worrying too much. They show a high degree of harmonious accommodation of disability. It accounts for 7.49% of the variance.

Factor VIII: Over compensation—This factor deals with the disabled person's tendency towards competitive attitude—a desire to stay at par with the non-disabled. It seems a form of over-compensatory behaviour. Again, it accounts for 8.12% of the variance.

Although the factor analysis has shown that there are different dimensions in a disabled person's perception of his disabilities, the self-image developed from these perceptions seem to be of two basic kinds: (a) those which emphasize the physical disability and its limitations, and (b) those which emphasize compensa-

TABLE 5: PERFORMANCE SCORE AMONG DISABLED PEOPLE WITH "POSITIVE" AND "NEGATIVE" SELF-IMAGES AND DIFFERING DEGREES OF DISABILITY

Performance score	SELF-IMAGES OF DISABLED PEOPLE			
	Positive		Negative	
	With slight disability	With severe disability	With slight disability	With severe disability
High	39.1	20.8	34.8	10.9
Low	14.4	25.7	17.0	37.3

Note: A striking difference in this table is found between the "positive" and "negative" people in the severely handicapped categories ($X = 15.13$; $df = 1$; $P < 0.001$)

tory features, while merely acknowledging the physical disability. The first, which we refer to as "negative acceptance of loss", tend to lead to despondency and general dissatisfaction with life. The second, referred to as "positive acceptance of loss", tend to lead to "obliterative adjustment", with a tendency for the disabled person to repress any recognition of the effects of his disability in order to forge ahead in life.

The influence of the self-image on performance

The second stage of our analysis considered how these "negative" and "positive" self-images affect successful performance. The exercise at this stage was, therefore, the comparison of disabled people with "negative" and "positive" self-images regarding successful performance. We expected that disabled persons with "negative" self-images would be less successful than those with "positive" self-images. This hypothesis was based mainly on the finding that the category of disabled people revealed higher degree of despondency, a general attitude of self-inadequacy and sense of impotence. Clearly, a person who finds himself in that state of mind would have no inducement to strive for excellence and is therefore unlikely to perform well. The general findings of this analysis are illustrated in Table 5, where the control for the degree of physical disability is given. The data in the table support two main conclusions:

- i) even though there is no significant difference between the mean scores of disabled persons with "positive" and "negative" self-images, the direction of the difference is as expected—the performance of people with positive self-concepts is better than those with negative self-images; it seems, therefore, that in spite of the unimpressive correlation, the distinct feature of the relation is in the better performance of individuals with positive self-images;
- ii) repetition of the same procedure in each of the eight groups (as shown in the table) revealed that a strikingly significant difference was found in the severely handicapped category; apparently, the amount of despair manifested by a disabled man and, therefore, the level of motivation he is likely to have in striving for excellence is a function of the degree of seriousness of his physical disability; we have thus "specified" the relationship.

The concept of disadvantage: non-handicapped are concerned as well

The disabled man, until he arrived at the point of disability in his life career, had (at least potentially) certain physical and social endowments for successful performance. But from that point on, he comes to have less resources, power, and

ability to deploy than others. Clearly, in some cases this is in a sense a true representation of the person's capacity; but just as clearly other people become disadvantaged in the successful performance of tasks because of malfunctions in social processes. The contemporary, cultural definition of what constitutes disadvantage along the various dimensions of identity (e.g. at the physical, intellectual or personality level) may result in the "disabled" persons making "disadvantageous" performance.

Many handicapped people come into this category of disadvantage because, during the process of socialization, they are labelled in such a way that they have self-concepts which result in their operating below their capacity along one or more dimensions of their identity.

This process has been found here to occur among disabled people, but it can also be the fate of a normal population, such as a group of young school leavers who have arrived at the point in their life career where a decision must be made on the choice of their first job. As Musgrave (1967) has stressed, occupational choice may be seen as a process where the individual offers his capacities to an employer in exchange for a wage under certain restricting conditions (e.g. long hours, dirty work, etc.). The bargain that he strikes depends not only on the employer's view of the prospective worker but also on the employee's own view of his capacities, his self-concepts. If, therefore, he is at a disadvantage because of the socialization process that he has undergone to date, he is likely to see himself as having less resources and hence less power in this exchange than he in fact has. The result will be that he makes a disadvantageous bargain.

Thus, at the point of choice, the young school leaver with a self-concept which minimizes his abilities is put at disadvantage in that he thinks he has less resources in the bargaining situation than he has, or could have. The less he knows of "the realities of access" (Sherlock and Cohen 1966), the further he is from gaining the material and non-material rewards which correspond to his capacities—and which he may, in fact, desire—and the more likely he is to be offered a lower status job that he must eventually take.

The danger of labels

Just as groups of individuals may come to occupy disadvantaged positions in their choice of occupations, so others may come to be poor performers at school through the same process of socialization. We have already referred to some research evidence in the USA which showed that self-concepts of intellectual ability could be learnt so thoroughly that a child might come to perform below his capabilities at school. Intellectual identity can develop when the teacher or parent, consciously or unconsciously, labels the child as dull, bright, lazy, hard-working, diligent, etc. Furthermore, recent work in the USA would lead us to believe that contemporary developments in the organization of education may in fact be building in such a process of labelling in the administration of our schools. Many schools there make use of trained counsellors, whose task is partly to help "problem" children and partly to aid in occupational choice. From a major study of one such school in a Chicago suburb (Cicourel and Kitsuse 1963), it was found that the introduction of counsellors in schools increased the chance of early and permanent labelling of children as bright or dull, or as bad risks on personality grounds. This latter may be as important a process as the former where written, or even oral, references count.

It seems a reasonable hypothesis, therefore, to say that the very attempts which educators make to give the "problem child" and the "dull ones" special attention may be the mechanisms by which some categories of children become confirmed in the self-concepts of intellectual disability, which is then reflected in their academic performance.

Two key issues

This analysis has raised some issues that are important in practice. For instance, for each of such categories as the "problem child at school", the maladjusted in a rehabilitation unit, the "unemployed or under-employed school leaver", etc., it seems necessary to know the crucial role-definers in the process of socialization and the nature of their power to make their definitions stick.

It seems necessary to know also the points in the pathways through the social structure which are crucial for giving/accepting of self-concepts of disadvantage and the structural conditions which favour the giving, accepting or changing of these self-concepts of disadvantage.

It is only through the application of such sociological and social psychological analysis that the disadvantaged can be enabled to perform at a level more consonant with their full capabilities.

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PROJECTS WITH INDUSTRY:
THE CONCEPTS AND THE REALIZATION

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Projects With Industry: The Concept And The Realization

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In the United States, the rehabilitation and reemployment in competitive positions of disabled people has often been unsuccessful because of one or more of the following:

- The job training given has not provided the skills actually needed by business. Rehabilitation clients have often been trained in outmoded skills.
- The rehabilitation counselors have not known how to approach business people and often look at the business person as an adversary.
- The rehabilitation counselors have not been trained in job placement. They don't know how to go about marketing their product — trained disabled people.
- The business person has not fully understood what is involved in bringing the disabled person into the work place, and, therefore, tends to act defensively — seeing only the negative aspects of having a disabled employee.

This paper describes an approach to rehabilitation that overcomes these problems, and describes one particular program that implements the approach.

The new approach is to develop a partnership of the business and rehabilitation communities to help meet their complementary needs — that of rehabilitation to obtain jobs

for their disabled clients and of business to obtain qualified, well-trained employees. This partnership concept has been formalized under a Federal Government program called *Projects With Industry*, abbreviated as PWI. At this time there are about 100 PWI projects with over 5,000 business people participating as members of their Business Advisory Councils. There have been over 10,000 placements of disabled people into permanent jobs. PWI projects can be roughly categorized into these three models:

- The *Job Placement Model* seeks immediate, permanent, full time employment for already-qualified disabled people by matching their skills with the needs of local businesses.
- The *Work Adjustment Model* provides temporary work experience for disabled people that, in addition to providing opportunity to develop marketable skills, helps to develop those qualities of attitude and behavior that will be desirable in competitive employment.

- The *Skills Training Model* teaches work-ready disabled people technical skills needed to compete for higher paying jobs.

The common attribute of all of these models is the participation of

business people who provide guidance and leadership to the rehabilitation agencies and disabled people. Another positive attribute to emphasis on job placement as the primary goal of the projects.

PWI is placing disabled people in *actual work settings* provides the best means of evaluating their work abilities; knowledgeable business people are used as a resource to identify available jobs, delineate job qualifications, and design training programs; and the *interaction* between business people and the disabled provides a worthwhile learning experience for each about the other.

During the 60-plus years that formal rehabilitation programs have been in existence, there have been many attempts by competent rehabilitation people to involve people with business experience in the rehabilitation process. Some have been very successful, but all have been limited in scope. The clients of that counselor or office have benefited, but the process has not been expanded and replicated.

There have also been a number of business-initiated efforts to place disabled people. Outstanding among these is a project started by the Florida Restaurant Owners' Association. Unlike most other efforts of this

sort, the Florida project was adapted by the Restaurant Owners' national trade association and has become nationwide in scope. It is now operated as a PWI, falling generally within the skills training model.

A formal PWI, as was stated earlier, is established as a partnership between business and rehabilitation. The prototype of such a partnership was created in the early 1970s when the IBM Corporation joined with the Rehabilitation Services Administration (RSA) (then of the Federal Department of Health, Education, and Welfare) and the then Department of Vocational Rehabilitation of the Commonwealth of Virginia to design, develop, and demonstrate for possible replication in other states a new joint training and placement project to benefit the most severely disabled people. These were envisaged as primarily the wheelchair-bound — quadriplegic, paraplegic, cerebral palsied, and advanced arthritic. With time and subsequent replication, however, the IBM-initiated projects have served persons with a broad spectrum of nonintellectual disabilities, including deafness and blindness.

Computer programing was selected as the vocation objective because it is a profession where intellectual capacity is more important than physical dexterity and mobility. Also, computer programing is ubiquitous; it is used by all industries in all locations. There is a continuing and growing need for computer programmers in the United States. Computer programing is an excellent job for the severely disabled since it is a well-paying profession with significant growth opportunities. (A good salary is mandatory for a quadriplegic who has continuous medical requirements that can be extremely costly.) Finally of course, computer programing is a



As in any endeavor, practice makes perfect. Many keyboard hours are needed to master the art.



field that is quite familiar to IBM and is one with which we feel comfortable.

All of the projects which have sprung from this particular model share some common characteristics:

- They are sponsored, funded, and administered by local agencies. At the present time, these include state rehabilitation departments, independent rehabilitation facilities; community colleges; state universities; and, in one case, a private nonprofit corporation established specifically to support a training project.

- They are closely guided and controlled by a Council of Data Processing Managers and Programers who are the persons best qualified to prescribe and monitor the prerequisites for entry into training, the curriculum to be taught, and the training standards to be met.

- The responsibility for graduate placement is shared between the sponsoring agency and the Business Advisory Council (BAC) so that optimum placement is assured and that both parties remain deeply involved throughout the process.

After the demonstration project was established at Virginia's Woodrow Wilson Rehabilitation Center, a second project was started in California at the Center for Independent Living. It was at this San Francisco Bay Area project that the major advantages of a local BAC became evident; until then, it had been assumed that the IBM technical contribution would suffice. The capability and enthusiasm shown by the local business community made it clear that BAC was the way to go. This fitted in very well with the initial and continuing concept — to establish programs throughout the U.S. in such a way that these programs become self-sustaining under local control.

It was during the period of establishment of the California project that IBM was approached by Mr. Tom Fleming of RSA who proposed a continuing RSA/IBM partnership to ensure the propagation of this new concept. Under this partnership, the two projects initially started by IBM have grown to 20 projects distributed across the country. More are in process of development.

With succeeding projects came more lessons with resulting procedural changes. In 1976, a project was established within a university — the University of Pennsylvania in Philadelphia. This demonstrated that a third partner could not only contribute but could take a leadership role, still under the guidance of a concerned BAC.

Other projects have been established at the University of Missouri, at Louisiana State University, and at Kent State University in Ohio. Universities that have a strong contributing role include Yale in Connecticut, the University of Alabama at Birmingham, and the University of Maine. In Maine, the project is conducted by the Bangor Community College which is an element of the University of Maine at Orono. The Colorado project is conducted by the Community College of Denver.

Within the last 2 to 3 years, a new project has been developed which has some distinct differences in organization and support as compared to its predecessors. After the project run by Easter Seal-Goodwill Industries in New Haven, Connecticut had been in operation for several years in a very successful manner, some of the BAC members decided to incorporate separately and establish a new project in another city (Stamford) which would be controlled and supported directly by the business community. To this end, they obtained monetary

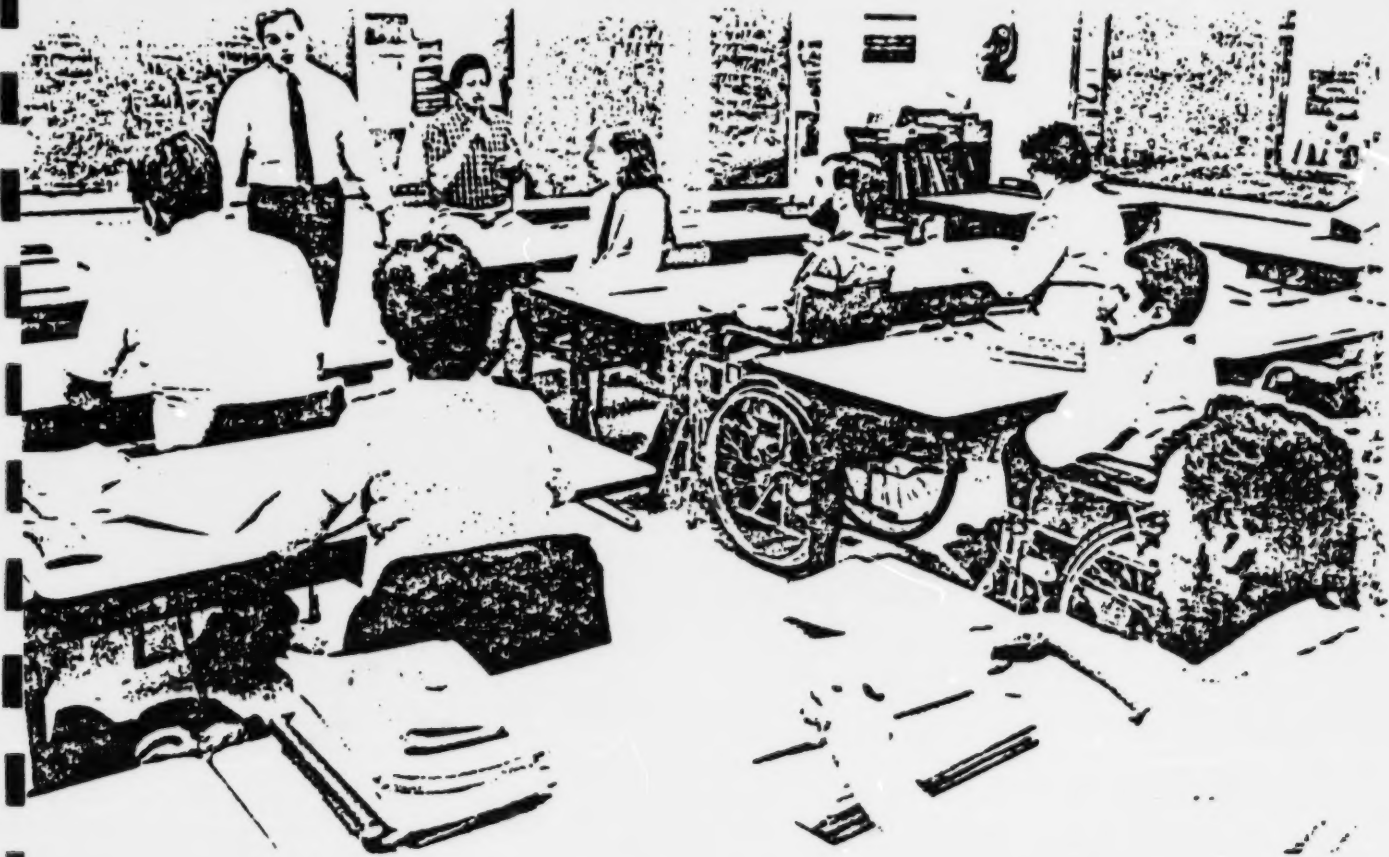
contributions from potential employers of project graduates, hired the necessary staff, and rented space for training. There are those who predict that just this sort of direct business participation in the rehabilitation process will be necessary to compensate for the expected losses in government support.

In 1978, these IBM-initiated projects formed a national association — the Association of Rehabilitation Projects in Data Processing (ARP-DP). This association has incorporated and accepts for membership any nonprofit training organization whose objective is to train and place severely disabled people as computer programmers.

Whereas, in the beginning, IBM's participation was quite comprehensive and in depth, its role now is primarily that of a catalyst. Help is provided at the start and to establish a working BAC, followed by only that subsequent help which is wanted and needed.

The first step is to explain the project's potential to the rehabilitation directors. If they wish to establish a project, and are prepared to support it financially, IBM then works with designated project directors to determine the best training locations, the training agencies, and initial project organizations. The project directors then initiate client surveys and recruitment efforts, while the IBM consultant makes the necessary contacts to establish embryo BACs.

With BAC establishment and its organization into committees, the real work begins. Usually a *Selection and Prerequisites Committee* begins immediately to survey the local data processing community to determine the locally acceptable criteria for student selection. Typically, such criteria include an above-average learning ability, high reading comprehension



Photos on this and page four are from the Projects With Industry project operated at the Long Island, N.Y., Abilities Center. Computer theory and operations are thoroughly discussed (above) in classroom (note interpreter for deaf students). Individual attention (right) irons out student problems, as is also the case on the actual console in the lower photo on page 4. Also on page 4 (top photo), not quadriplegic's (1st row, 2nd person) use of hand-held wands to work the computer console.



scores, and at least an average aptitude for programming — all measured by standard test instruments. Beyond that, in the individual case, they will wish to examine the type of disability, the demonstrated motivation of the potential student, and his recorded education level and record of performance. Some BAC selection committees participate in preselection interviews while others prefer to merely direct the process.

At the same time, the *Curriculum Committee* surveys the data processing community to determine the subject matter and the depth to which it must be taught to meet the local community's needs. These vary in detail because of differences in classes and manufacturers of computers among different areas. The curriculum typically fills a 9 to 10 month period made up of 6 to 8 hour working days and includes a 6 to 8 week period of internship during which the student actually works as a programmer in a data processing department.

The early employment of an instructor allows him to work with the BAC committee in curriculum development. Usually about 6 to 9 months is spent in the preliminaries before training actually starts.

Another essential preparation element is communication with ongoing projects. The existing projects, individually and through ARPDP, are a source of invaluable information for the developing project. This communication is cultivated by the IBM consultant or liaison.

Once training is in process, another BAC committee becomes active — *Evaluation and/or Technical Review*. Through this committee, the BAC periodically meets with each student to become acquainted, review his academic progress, identify problem areas, and evaluate the curriculum and course as a whole. In addition to

the very necessary evaluations already listed, this process provides other, even more valuable, benefits. It exposes the student repetitively to data processing people in a pseudo-management role; the course graduate learns how to present his work and how to answer questions. Even more significantly, the involved managers become comfortable with people with various disabilities; they begin to see the person, not the disability. The members of the evaluation team, having become familiar with certain students and their capabilities, are in a good position to evaluate students for employment in their own companies, can honestly write "business references" for the students, and, can make contacts and open doors leading to interviews and possible employment.

Toward the end of training, the *BAC Placement Committee* becomes more active since it must help train the students in job search and retention, help train the project director and rehabilitation counselors in placement techniques, and take specific action to aid in placement.

In an operating project, all functions are simultaneous. As one class begins, recruitment and selection for the next class starts. The curriculum is constantly reviewed to keep it in tune with local requirements and to ensure that the latest texts and techniques are used. Evaluation is ongoing. And the placement activity includes job development in advance of placement, and usually the recruitment of new BAC members to ensure broad community involvement.

The rehabilitation agency, usually through the project director, is responsible for the identification and provision of all necessary aids, assistance, and training (except for technical training) to ensure that the

student at graduation will be ready and able to go to work, to meet normal work standards, and to compete on a realistic basis with the other programmers. These aids and services may include work adjustment; training in the activities of daily living; purchase, modification, and training in the operation of a vehicle; the purchase of clothes. The project director is responsible to ensure that everything has been done at the proper time to meet the objective — a work-ready, technically-qualified graduate.

As of December 31, 1981, there were 20 projects of the sort described above. There are four more in some stage of development and two good prospects who had requested consideration. More than 650 new programmers had graduated and more than 530 had already been placed in competitive, programmer positions. History suggests that more than 550 of these graduates will have actually gone to work, since placement has consistently exceeded 85 percent.

With the increasing scarcity of federal funding, it will become progressively more important that the available funds be expended judiciously. Projects of this sort, although expensive to operate, are an excellent investment, since they result in a high placement rate and financial independence for the successful graduates; and they address the needs of our most severely physically disabled population. Even a rough balance sheet would show that much more money is saved than is spent.

Mr. Kaplan is Manager of the IBM project to train disabled people and Mr. Hammond is a member of the consulting team. The paper is an updated version (through December 1981) of a presentation made at the First International Abilympic Seminar, Tokyo, in October 1981.

*

ADAPT

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February 1982

* Affirmative Disabled Action Programme, Toronto

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A.D.A.P.T.*

History

The Mayor's Task Force on the Disabled and the Elderly was initiated in July 1973 and resulted in the Task Force Report of July 1974.

The original ADAPT checklist was developed by A.W. Cluff and P.J. Cluff for the City of Toronto Planning Department to evaluate major public and municipal buildings in Metro, prior to the Handicapped Olympaide held in Toronto on July 1976.

By its very nature the original checklist was intended for use, to establish primary accessibility, particularly for the mobility impaired as visitors to facilities.

This revised checklist has been up-dated to reflect a broader range of disabilities in a variety of buildings and/or facilities. Typical disability groupings now include the visually and/or perceptually impaired as well as various degrees of mobility impairment.

We present this revised version in the belief that it will provide employers with an initial assessment tool of their own buildings, and work settings for potential employees under the Affirmative Action Programme.

* A.D.A.P.T. - (Affirmative Disabled Action Programme, Toronto)

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ACCESSIBILITY COMPLIANCE CHECKLIST

A.D.A.P.T. (Affirmative Disabled Action Programme, Toronto)



<u>SECTION 1</u>		YES	NO	COMMENTS
ACCESSIBLE ENTRANCES				
A.	<u>Parking Lots</u>			
1.	Are there any parking spaces identified as reserved for disabled drivers close to the entry? (within 100' - 30m) (1% of all spaces recommended)	—	—	
2.	Is there any sign or attendant to direct disabled drivers to parking spaces?	—	—	
3.	Are parking spaces open on one side, allowing room for individuals in wheelchairs or on braces and crutches to get in and out? (12' - 3.7m minimum width)	—	—	
4.	Is the surface of the parking lot smooth and hard (no sand, gravel, etc)?	—	—	
5.	Does the parking space lead directly to the selected entrance without crossing any driveways and is it clearly marked and free of hazards?	—	—	
6.	Is there a passenger drop off zone located near the selected entrance?	—	—	
7.	If there are curbs, are there curb cuts? (minimum width 36" - 914mm) (maximum slope 1:8)	—	—	
8.	Is this information generally known by staff and visitors?	—	—	
9.	Are there any other constraints?	—	—	

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B. <u>Exterior Walks and Plaza</u>		YES	NO	COMMENTS
1.	Are public walks at least 5' (1.5m) wide?	—	—	
2.	Is the gradient no greater than 5% (1' rise in 20') (1.5m in 6.0m)	—	—	
3.	Are walks of a continuing common surface, not interrupted by steps or abrupt changes in level?	—	—	
4.	Do walks have a level surface at the top which is at least 5' x 5' (1.5m x 1.5m) if a door swings out on to the platform or toward the walk, or 3' x 5' (0.9m x 1.5m) if the door doesn't swing onto it?	—	—	
5.	Are walkways free of obstructions such as signs, trees and parking meters?	—	—	
6.	Are walkways free of gratings, manhole covers, etc?	—	—	
C. <u>Ramps</u>				
1.	Do ramps have a gradient no greater than 8.33% (1' rise in 12') (0.3m rise in 3.7m)	—	—	
2.	Do ramps have suitable handrails on both sides which extend 12" (305 mm) beyond the top and bottom of the ramp? (32" to 36" in height measured from the surface of the ramp - 813mm to 914mm)	—	—	
3.	Is the ramp at least 3' (0.9m) in clear width?	—	—	
4.	On long ramps, are there level platforms at 30' (9.m) intervals?	—	—	

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		YES	NO	COMMENTS
5.	Are landings at least the width of the ramp and 5' (1.5m) long?	—	—	
6.	Is there a 5' (1.5m) level surface at the top and bottom of the ramp?	—	—	
7.	Is the ramp well-lit at night throughout its length?	—	—	
8.	Is there directional signage to ramp location?	—	—	
9.	Are there alternate routes (e.g. stairs) close-by?	—	—	
D.	<u>Entrances/Exits</u>			
1.	Is at least one primary entrance usable by a person in a wheelchair?	—	—	
2.	Does this entrance connect to a level that provides access to passenger elevators?	—	—	
3.	If the primary entrance has a vestibule is it a minimum of 7' (2.1m) deep?	—	—	
4.	Do revolving doors have adjacent swing doors which are at least 36" (914mm) wide?	—	—	
5.	Is there a sheltered entrance usable by persons in wheelchairs?	—	—	
6.	Is there more than one accessible entrance for those in wheelchairs?	—	—	
7.	Are fire doors and exits accessible to, and usable by persons in wheelchairs?	—	—	



E.	<u>Main Door and Doorways</u>	YES	NO	COMMENTS
1.	Does each door leaf have a clear width of 32" (813mm)?	—	—	
2.	Are the door handles easy to grasp and operate?	—	—	
3.	Can the doors be operated with a minimum amount of strength or pressure? (approx. 5 lbs. pressure)	—	—	
4.	Are doors opened by an automatic device?			
5.	Are door closers equipped with delayed action to allow for slow movement of physically disabled persons?	—	—	
6.	Is the floor on the inside and outside of each doorway level for a distance of 5' (1.5m) from the door in the direction door swings, and does it extend 1' (305mm) beyond each side of the door?	—	—	
7.	Are doorsills (thresholds) no higher than 5/8" (16mm)?	—	—	
8.	Do doors have kickplates?	—	—	

SECTION 2

YES NO COMMENTS

INTERNAL ACCESS TO ALL FLOORS

A. Stairs and Steps

1. Do stairs have minimal nosings (i.e. project less than 1" - 25.4mm)?
2. Are stair nosings non-slip and/or colour differentiated from treads?
3. Do stairs have risers of 7" (178mm) or less?
4. Are stair treads at least 10" (254mm) deep?
5. Do stairs have handrails 32" (813mm) high (36" - 914mm maximum) as measured from the tread at the face of the riser?
6. Are handrails distinguishable by blind users?
7. Is the handrail easy to grasp? (1½" to 2½" - 32mm to 57mm maximum)
8. Is there sufficient clearance between the handrail and the adjacent wall? (1½" - 32mm minimum preferred)
9. Are stairs and landings well-lit?
10. Are stairs and all landings free of obstructions?
11. Are stairs and exits identified by clear unambiguous signage?

—	—
—	—
—	—
—	—
—	—
—	—
—	—
—	—
—	—
—	—
—	—

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B.	<u>Elevators</u>	YES	NO	COMMENTS
1.	If the building is more than 1 storey, are elevators accessible to physically disabled persons?	—	—	
2.	Are elevator controls 48" (1219mm) or less from the floor?	—	—	
3.	Are controls easy to use by blind individuals or those with manual dexterity limitations?	—	—	
4.	Are the emergency telephone and controls accessible?	—	—	
5.	Are call buttons in elevator lobbies 48" (1219mm) or less from the floor?	—	—	
6.	Are there visible and audible signals provided?	—	—	
7.	Are elevators equipped with a self-levelling mechanism?	—	—	
8.	Are elevators equipped with an automatic reopening device which will reopen the car door if it is obstructed by an object or person?	—	—	
9.	Are the car doors at least 36" (914mm) in width?	—	—	
10.	Is the gap between the car platform and the landing 1½" (32mm) or less?	—	—	
11.	Is there a suitable handrail in the cab?	—	—	
12.	Is there suitable lighting inside the cab?	—	—	
13.	Is the cab at least 5' x 5' (1.5m x 1.5m)?	—	—	

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C.	<u>Interior Floors</u>	YES	NO	COMMENTS
1.	Do floors have non-slip surfaces?	—	—	
2.	If floors are carpeted, are they non-static and usable by persons in wheel-chairs (i.e. dense loop pile)?	—	—	
3.	Are floors non-reflective or glare-free?	—	—	
4.	Are all floor surfaces well-lit?	—	—	
5.	Are floor materials (patterns) visually confusing?	—	—	

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SECTION 3

YES NO COMMENTS

ACCESSIBLE WASHROOMS

- | | | | | |
|----|--|-----|-----|--|
| 1. | Is there an accessible toilet for each sex available to persons in wheelchairs? | ___ | ___ | |
| 2. | Are vestibules and aisles at least 42" (1067mm) wide? | ___ | ___ | |
| 3. | Do toilet rooms have turning space of 5' x 5' (1.5m x 1.5m) to allow wheelchair manoeuvrability? | ___ | ___ | |
| 4. | Do washrooms have the following: | | | |
| | a) cubicles at least 54" (1372mm) wide? | ___ | ___ | |
| | b) cubicles at least 60" (1524mm) wide? | ___ | ___ | |
| | c) cubicles doors that are 32" (813mm) wide and swing out? | ___ | ___ | |
| | d) suitable grab bars inside cubicle? | ___ | ___ | |
| | e) water closets with seat 16" (406mm) minimum and 18" (457mm) maximum above the floor? | ___ | ___ | |
| 5. | Do toilet rooms for men have wall mounted urinals with the opening of the basin 17" (432mm) from the floor, or have floor mounted urinals that are level with the main floor of the toilet room? | ___ | ___ | |
| 6. | Do lavatories have a minimum of 29" (737mm) clearance under the edge of the basin or vanity? | ___ | ___ | |
| 7. | Do lavatories have lever-type faucets? | ___ | ___ | |
| 8. | Is there a temperature control on the hot water supply? | ___ | ___ | |

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		YES	NO	COMMENTS
9.	Is one mirror and shelf at a height no greater than 38" (965mm) above the floor?	—	—	
10.	Do toilet rooms have towel racks, dispensers, and disposal units located in an accessible space? (maximum 40"-1016mm above the floor)	—	—	
11.	Can an accessible washroom be used by disabled persons requiring assistance of either sex?	—	—	
12.	Are wheelchair accessible washrooms identified by suitable signage or symbols?	—	—	
13.	Are washrooms well-lit?	—	—	
14.	Are floors non-slip and well-drained?	—	—	

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SECTION 4

YES NO COMMENTS

ACCESSIBLE DRINKING FOUNTAINS AND TELEPHONES

A. Drinking Fountains

1. Are there any accessible drinking fountains (i.e. basins 36" - 914mm or less from floor) in the public areas?

— —

2. Are they easy to operate by disabled persons?

— —

B. Public Telephones

1. Is there a public telephone accessible to an individual in a wheelchair with the height of the dial and coin slot 48" (1219mm) or less above the floor? (clear approach width of 32" - 813mm)

— —

2. Are telephones equipped for persons with hearing disabilities?

— —

3. Are such telephones clearly identified by suitable signage or symbols?

— —

4. Are accessible telephone areas well-lit?

— —

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SECTION 5

YES NO COMMENTS

PROVISIONS FOR PERSONS IN WHEELCHAIRS AND
OTHERS WITH HEARING OR SIGHT DISABILITIES

A. Controls

1. Are switches and essential controls e.g. light, fire alarms, and all similar controls within reach of individuals in wheelchairs? (48" - 1219mm maximum height)

— —

B. Identification

1. Is there a directional signage system for disabled persons in the building?
2. Are raised (or recessed) letters or numbers used to identify rooms or amenities?
3. Are signs at a height between 54" and 66" (1372mm to 1676mm) measured from the floor?

— —

— —

— —

C. Emergency Signals-Fire Alarms, Etc...

1. Are emergency signals accompanied by simultaneous visual signals for the benefit of those with hearing or sight disabilities?
2. Is there an evacuation plan for both able-bodied and disabled individuals during emergencies?
3. If so, is information on the plan available and/or posted in conspicuous locations throughout the building?

— —

— —

— —

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	YES	NO	COMMENTS
4. Are fire and emergency drills carried out regularly?	—	—	
D. <u>Hazards</u>			
1. External - are changes of level marked by change of floor texture?	—	—	
2. External - are hazardous objects identified?	—	—	
3. Internal - are hazardous objects on the route identified or mounted above 7' (2.1m)?	—	—	

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SECTION 6

YES NO COMMENTS

SPECIAL INTERNAL PUBLIC SPACES

A. Cafeteria

1. Is there sufficient passage width (36" - 914mm) for a wheelchair to go through the food service lane and between tables?

— —

2. Are cutlery and food display racks visible and within reach of a person seated in a wheelchair?

— —

3. Is there suitable dining space for people in wheelchairs?

— —

B. Lecture Hall or Auditorium

1. Is there a choice of seating arrangements or areas for persons in wheelchairs to sit without blocking the aisle?

— —

2. Are there any provisions for those who have hearing impairments (e.g. induction loop, FM receivers)?

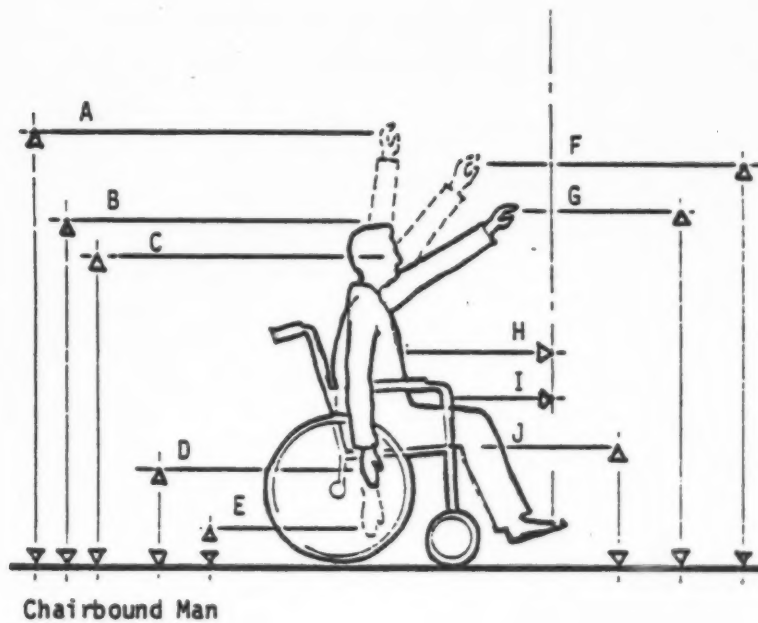
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C. Other Amenities and/or Public Spaces

Comments:

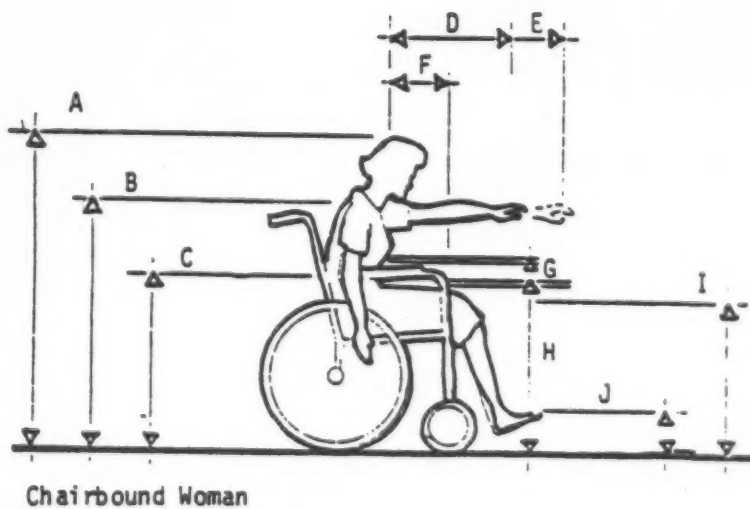
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	MALE	FEMALE
A	5'-6"	5'-1"
B	4'-6"	4'-2"
C	4'-1"	3'-11"
D	1'-3"	1'-5"
E	7"	7½"
F	5'-2"	4'-8"
G	4'-6"	4'-1"
H	2'-1"	1'-4"
I	1'-5"	1'-3"
J	1'-7½"	1'-7½"

Approximate Dimensions



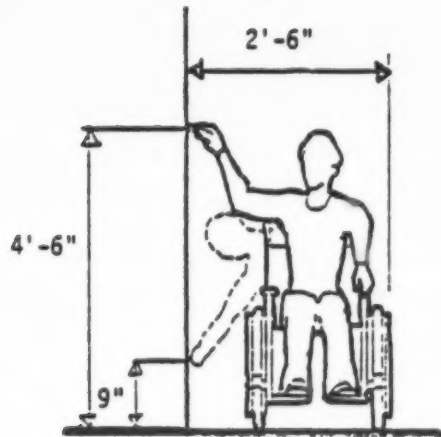
	MALE	FEMALE
A	4'-4"	4'-1"
B	3'-5"	3'-3"
C	2'-3"	2'-3"
D	1'-11"	1'-4"
E	2'-7"	2'-2"
F	7"	7"
G	2'-7"	2'-7"
H	2'-2"	2'-2"
I	2'-1"	2'-0½"
J	8"	8"

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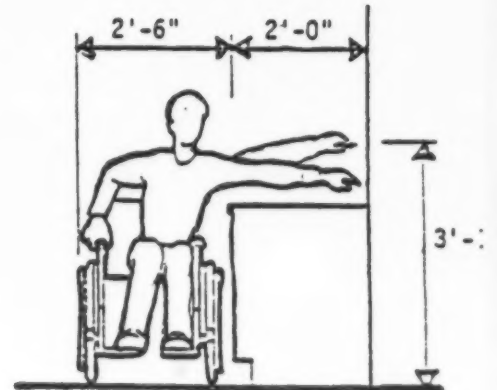
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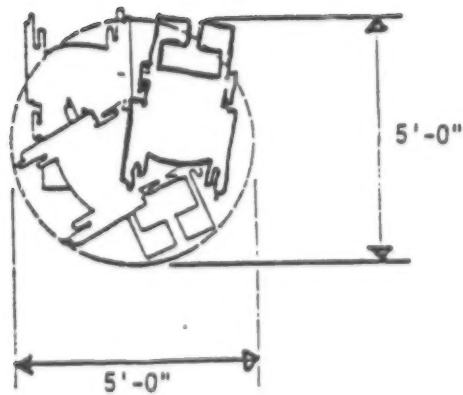
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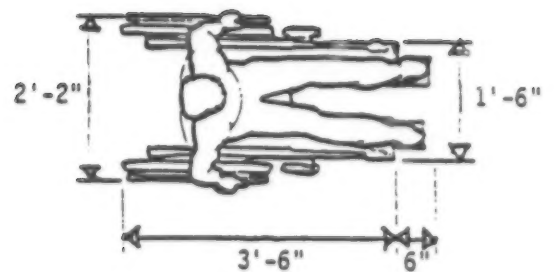
lateral reach vertical



lateral reach horizontal



wheelchair turning circle



wheelchair
plan dimensions

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D. Work Space Adaptions

Comments:

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SUMMARY SHEET



SUMMARY OF DISABILITIES

SPECIFIC DISABILITIES AND EMPLOYMENT

The nature of the handicap and the degree of disability may have an impact on both the individual's employment and the accommodation which the employer has to make. It is important to remember in this context however, that most of those who might be classified as handicapped require no special work arrangements and many others require only minimal adjustments.

In reviewing the categories of disability it is possible to identify potential limitations in terms of access, type of job, and accommodations. In the final analysis however, it is the individual's abilities, not disability, which should be considered. Can the person perform the job?

In working with specific disability groups there are a number of factors to consider.

(I) Sight Impairments

Approximately .02% of the population is blind and of this group half are over age 65. There are varying degrees of visual impairment, including the need for corrective lenses, colour-blindness, tunnel vision and lack of visual acuity. Not all blind persons are totally sightless.

Blind workers have shown themselves to be fully capable in a variety of occupations including teaching, law, assembly line work, computer programming, secretarial positions and engineering.

The adjustments which the employer will have to make will vary with the job and the employee. In some cases, special equipment e.g. "a talking typewriter" may be required. In others, some job restructuring will be necessary. Orientation in the case of a blind employee will include a comprehensive introduction to the work environment. There are as well certain interactive skills which supervisor and co-workers will have to develop such as explaining visual materials and announcing their presence in and exit from a room.

(II) Hearing Impairments

The terminology used to differentiate the degree of hearing impairment usually identifies two levels - "deafness", a total loss and "hard of hearing", a partial loss. The loss of hearing may be congenital or it may occur as a result of an accident or illness in later life. Hearing loss is usually classified as either conductive (failure in the transmission of sound waves in either the outer or middle ear) or sensorineural (failure in receiving the vibrations because of an inner ear defect). In some cases both types of loss have occurred.

Hearing aids can assist some but not all of the hearing impaired. Therefore the employer may need to consider using a visual medium in some situations as in providing a flashing light for a fire alarm and blackboards for staff meetings. Communication is enhanced by ensuring that the speaker face the hearing impaired person and speak normally. It is not advisable to place a hearing impaired person in a noisy environment without first ensuring that the background noise will not be a source of pain and frustration.

(III) Verbal Communication Difficulty

Many forms of accident, illness or birth defect can lead to impairment or total loss of verbal facility, for example, those with cerebral palsy may have serious difficulty with verbal communication. Cancer of the larynx may leave a person with speech which is laboured and sound unusual to the average listener. In one case, erroneous conclusions may be drawn about the intellectual ability of the person; and in the other, co-workers may feel uneasy.

Various devices have been developed to assist those with verbal communication difficulties. These range from sophisticated technological devices to personal and structural adjustments in interpersonal exchanges.

(IV) Neurological Dysfunction

Neurological impairment can take many forms ranging from various types of learning disability to a symptom such as epilepsy. Each type of disability will require a different adaptation on the part of both the handicapped worker and the employer. In the case of those with a slight learning disability it is likely that the person has learned at an early stage to compensate and the disability will be hidden. Those who have some form of epilepsy (approximately 2% of the population) will vary in the degree to which their condition may impact on their employment.

It is estimated that approximately 50% of persons with epilepsy have their disease completely under control through the use of medication, and another 30% have minimum effects.

People with epilepsy are found in all occupational groups - professional, business, clerical, sales, service and unskilled labour.

Proper job placement is important to the employee's success and the employer should possess a number of facts.

- Type of seizure - this may be a factor in placement but should not be a barrier.
- Control - are seizures under medical control? Completely or partially? Drugs can enable some epileptics to fill a job the same as anyone else.
- Frequency - how often do seizures occur? In many cases they don't occur at all. In others they are highly predictable and job assignments can be geared around them.

(V) Muscular - Skeletal Disabilities

The individual with a back problem which limits heavy lifting, and the paraplegic, may both fall into this category. The latter condition may have resulted however from a spinal cord (nervous system) injury, from poliomyelitis or muscular dystrophy.

There are obvious barriers which affect those who have mobility problems and there are facts which the employers should take into account in hiring individuals with a disability such as muscular dystrophy.

The structural barriers include width of doors, steps, lack of disabled parking spaces, inaccessible bathrooms, and difficult to reach elevator buttons, telephones and water fountains.

The facts about disability such as muscular dystrophy relate to:

- Longevity - it varies from a full lifespan to a shortened one.
- Illness - people with muscular dystrophy may need more medical attention than others. However, this should not necessarily disqualify them for a particular job.

(VI) Cardio-Vascular Impairment

There are many disorders which fall under the heading of cardio-vascular diseases. The severity of the condition will directly impact on the tolerance of physical exertion and stress. It is therefore important that the person be fully assessed and that the physician be apprised of the work being performed.

(VII) Respiratory Disabilities

Those with severe allergies or lung disease may be subject to work limitations depending on the severity of their conditions. The employer will require a functional medical assessment to ensure that proper placement and job accommodation occur.

(VIII) Disfigurement (Appearance)

Some people are unable to obtain employment because of disfigurement. It may be felt that the image of the company would be affected or that co-workers or clients would feel uncomfortable. The individual who is disfigured should, like all handicapped persons, be assessed individually on the basis on his/her ability to perform the job.

These are some of the specific disabilities and their effects on the disabled employee, the employer, and the employment situation in general. When approached analytically it is possible to determine specific effects, if any, and to make reasonable accommodation.